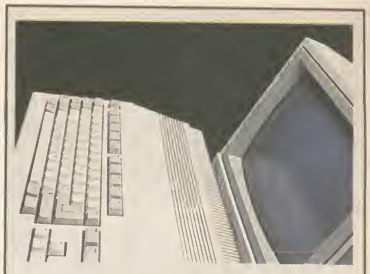
Issue 25 • Apr 29 1989

Only 48p!

Comms and networking guide – page 30

NEW COMPUTER EXPRESS

First news, first reviews – every week



SOMETHING WONDERFUL

At last! The inside story of the Amiga page 19

Power up!

page 15

The best and cheapest upgrade for your machine

HOW I'LL SMASH THOSE HACKERS

"Jail them for 10 years" page 2

FREE INSIDE

Vouchers to save you £10

page 51

A➤Z

Your no nonsense guide to the world of computing

part 2

COLLECT THE SET!

page 25

Sections for YOUR machine

PC • C64

Amiga

Atari ST

Spectrum

CPC • PCW

QL • BBC

MSX

pages 33–40

The card which answers the phone – page 28

The monster which kicks in heads – page 47

Comment 4 • Charts 5 • Letters 11 • Columns 33 • Jobs 42 • Tips 43 • Classifieds 46 • Entertainment 47 • Vouchers 51

Anti-hacking MP warns of stiff penalties

HACKERS FACE TEN YEAR PRISON STRETCH

Hackers face up to ten years in jail, if a leading Tory MP has her way.

In an interview with *Express* anti hacking MP Emma Nicholson has told of her plans to outlaw the hackers and the stiff penalties she wants to impose. She warned that people could be killed as a result of hacking.

Nicholson last week presented her case to the Commons and is being supported by both sides of the House. It is looking increasingly probable that she will succeed in passing the Private Members Bill.

This week she will be giving a dossier to the Prime Minister outlining a number of disturbing cases of hacking and the reasons to outlaw the increasingly popular practice.

"I will propose that we outlaw computer hacking and that it is treated as a serious matter within the legal system," she told *Express*. "I have suggested that a bad case of hacking carry a ten year jail sentence.

"We must succeed. Hacking is a real threat to personal liberty and privacy."

Hackers can currently be prosecuted under normal laws if they tamper with information or commit fraud. However, no single law adequately covers the separate matter of hacking.

The Law Commission is currently studying the phenomenon but that report, claimed Nicholson, will not be finished this year. She warned that changing the law through this channel could take three years.

"Hacking is very serious and so the sentences must be hefty. People can be killed as a result of it," she said. "People want to go to the doctors and know that the information will be kept private. No one wants their medical records sprayed all over the streets.

"I don't want to do this in a 1984 sort of way, if you understand what I mean. It's just for the sake of normal peace of mind and natural privacy. There's no need to be excessive but it's crucial that I succeed."

Nicholson – MP for West Devon and Torridge – has been working with computers since 1961 when she joined ICL as a programmer.

The Labour party is supporting her Bill. Its spokesman for science and technology Jeremy Bray told *Express*: "The problem of hacking needs legislation although I would prefer not to comment on the recommended sentences."

Meanwhile, the bulletin boards were last week buzzing with rumours and speculation on the latest anti-hacking crackdown. One which sent shockwaves through the community was that Nicholson will propose a £1,000 licence fee for all modem owners. She responded: "That is absolutely untrue. I would never support making computing more expensive than it already is. It's a crazy idea."

Nonetheless, some bulletin boards are prepared for the worst. One complained to *Express*: "We need to know the exact wording here. If the wording is wrong then it would be very bad. Where will it stop?"

"We must succeed. Hacking is a real threat to personal liberty and privacy."

Cracking down on hacking: Tory MP Emma Nicholson wants it made a criminal offence

Ripping yarns

After last year's nationwide public and media uproar and condemnation over its tasteless horror game, *Jack The Ripper*, CRL is due to launch this infamous release on ST and Amiga next month.

Already out on Spectrum, C64 and CPC, *Jack the Ripper* is a standard text/graphic adventure, "enhanced" by digitised screens showing mutilated and dead women. Those of you interested in loading up such fare can find out more on 01 533 2918.

• One of the less unpleasant shots from Jack the Ripper

Cheap and cheerful 286

PC buyers have a new low-cost option as yet another hardware manufacturer brings out a new AT touted as being priced like an XT.

Viglen's 286 AT will cost £896. A colour EGA model weighs in at just under £1,000. Viglen says potential PC owners need skip over low end XT computing and go straight for a 286.

The VIG I Plus runs at 8/10 MHz with the standard model boasting a 30Mg hard disk, 640K RAM and 360K floppy. This continues a growing trend of 286 technology breaking the £1,000 price barrier.

• VIG I: 286 price breaker

HOW I LOST £37 MILLION IN A DAY

• Millions lost – but plenty left for Sugar

Sugar's bad day at the office

Amstrad boss Alan Sugar saw almost £37 million wiped off his personal fortune during the space of one day last week.

Last Thursday some £120 million was wiped off the stock market value of Amstrad – Sugar owns 45 per cent of the company. Shares took a dive of 21.5 pence effectively lopping 15 per cent off the firm's value.

The disastrous day's trading followed gloomy predictions from Sugar himself that year end profits would be down.

Market analysts immediately readjusted their predictions for the firms next financial results in September from £130 million to £110 million.

All this is as a direct result of the appalling shortages and delays of Sugar's 24 strong range of new high end PC2000s. Amstrad has been dogged by delays caused by the DRAM chip shortage and technical hitches such as the hard disk faults (Express 23).

Amstrad had introduced the PC2000s last September and has been running ads for months. However, anyone rushing out to pick up a machine has been frustrated as deliveries have been postponed. Indeed, only now are the machines arriving in any noteworthy numbers.

All these problems prompted Sugar to warn that profits would be below expectations. This follows Amstrad's first ever dip in profits in February when half year figures were down 16 per cent on last year.

The company has long been computing's golden boy and a shining example of Britain's much played upon new entrepreneurial spirit. Sugar's predictions have left the company's City position in a poorer state.

But don't expect to see Alan at the dole office. The losses aren't in real cash – only on paper. If Amstrad manages to ship adequate batches of the 2000 series into the UK a healthy upturn can be expected.

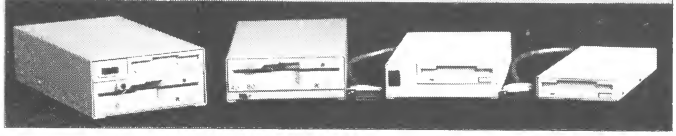
A HARD AND FLOPPY BARGAIN

ST and Amiga owners wanting to tap the power of a hard disk, now have another deck to choose from thanks to Power Computing.

Power's Triangle Turbo 3 hard disks come in either 20Mb, 40Mb, 80Mb or 100Mb versions, with prices starting at £399 ST and £499 Amiga.

Power also has a new range of floppy disk drives for the ST and Amiga. Triangle Elite drives feature on-off switches and track counters, and cost £129.95 ST, £119 Amiga. Also on the floppy front is a 3.5"/5.25" multi-drive for the Amiga, with twin track counters, isolation switches and 40/80 track switches, for a price of £249.

Anybody who doesn't know their hard disks from their floppy drives, can find out more information from Express issue 22.



Incentive's mail order incentive

Fans of Incentive's Total Eclipse can now buy a sequel – but only if you're part of the Home Computer Club.

Total Eclipse II – The Sphinx Jinx was specially commissioned for W H Smiths mail order outfit the Home Computer Club. It comes with the original for £11.20 on the big three 8-bit machines.

Computer North Show takes historical angle

Information hungry computer buffs are being invited to the Computer North Exhibition in June for a "unique" line up of old and new computers.

Organiser Cahners is to stage a history of computing section touted as a high tech museum. On display will be bits and pieces from early computers as well as rare photographs depicting the development of the world's earliest computers just after World War II.

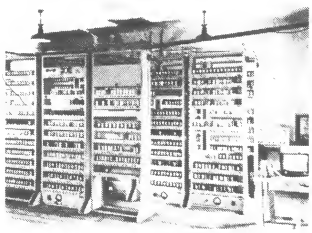
The museum will trace early developments such as the Mark 1 and Abacus in the 1940s and 50s through the fast development of the next two decades.

Computer North will be held at the G-Mex Centre in Manchester from June 6th until the 8th. Cahners reckons this is the North's biggest computer show.

Some 100 exhibitors will be setting up shop including Amstrad, Olivetti, Logitech and a variety of Northern firms. This, the third such show, is expected to attract 7,000 visitors.

"The history of computing section will be fascinating," said organiser Karen Phillips. "We want to focus on all that is relevant. You couldn't see it anywhere else. Some of these computers were as big as a board room but couldn't do much more than a modern hand held calculator." Phillips has borrowed artifacts from computer societies as well as various universities. Board room size computers – for obvious reasons – will not be on display. Key components are promised.

Anyone turning up on the door will be charged £3.00 although free tickets are available on 0792 792792.



• High tech 1940s style

CONTENTS

FEATURES

RAM UPGRADES
Do you suffer loss of memory? Express shows you how to stretch your machine 15

HISTORY OF THE AMIGA
The real story behind the development of the State of the Art micro 19

PHONE SYSTEMS
How tone dialling means you 28

COMMS & NETWORKS
Books that reveal these mystic arts 30

A-Z PART 2
B is for Baud, Babbage, Bug, BASIC, Barbarian, Big Blue... 25

REGULARS

EXPRESS COMMENT 4
CHARTS 5
LETTERS 11
BEGINNERS 22
JOBS 42
TECH TIPS 43
GAMES
Grand Master Slam, Jack Nicklaus Golf, Raider 47
GAME PREVIEWS
Last Stuntman, Vette!, Waterloo, Hostile All Terrain Encounter, Stormlord, Chuck Yeager's AFT, Panic Stations, Alphamax One, Gold of the Americas, Phobia, Sleeping Gods Lie, Super Scramble /Simulator, Apache Strike 48-49
VOUCHERS 51
BACK PAGE 54

YOUR MACHINE

ST 33
PC 34
AMIGA 35
SPECTRUM 36
COMMODORE 64 37
PCW, QL 38
BBC, MSX 39
CPC 40

COMMENT

HACK ATTACK

Illegal accessing of other people's computer data - hacking - seems sure to be made a criminal offence, punishable by up to ten years in prison. For everyone who stores sensitive information on their computer, the question is, how easily can hackers be caught?

The answer is, more easily than you might think. Indeed the problem up to now has not been catching or identifying hackers, but stopping them. After all, they weren't doing anything wrong, as in the famous case where two hackers broke into The Duke of Edinburgh's mailbox and examined his personal letters – all quite legally.

The police can use the same methods of tracking down hackers as they do to catch burglars: tracing back of the stolen items, tip-offs, examination of passwords used and times of entry, real time tracing, and inspired guesswork.

As *Express* has stated before, much of the onus is in fact on the computer owners themselves to tighten up their own security, perhaps employ data 'security guards' as they do guard dogs and patrolling services. Like the determined thief, the determined hacker will plug away whatever you do to stop them; but at least the police would be able to do something about it when they catch them.

The worry is that the innocent peeper who's first to be caught gets a ten year 'exemplary' sentence from some techno-phobic judge. The ten year sentence must be used as a maximum, to deter, and reserved for the real criminal intent on stealing information.

EDITOR.....Rob Ainsley
NEWS EDITOR.....Colin Campbell
REVIEWS EDITOR:.....Andy Storer
TECHNICAL EDITOR .....Jerry Glenwright
STAFF WRITER .....Rik Haynes
ART EDITOR .....Angela Neal
ART ASSISTANT .....Harriet Athay
PRODUCTION EDITOR .....Rod Lawton
ADVERTISEMENT MANAGER ....Mark Salmon
DEPUTY AD MANAGER.....Jennie Evans
AD EXECUTIVES.....Sarah King
AD TYPESETTING .....Terry Turner
PUBLISHER.....Greg Ingham
© Future Publishing Ltd 4 QUEEN ST, BATH, BA1 1EJ
TEL: 0225 446034 • FAX: 0225 446019
Printed by Redwood Web Offset, Trowbridge, Wilts
Distributed by Comag, West Drayton, Middx

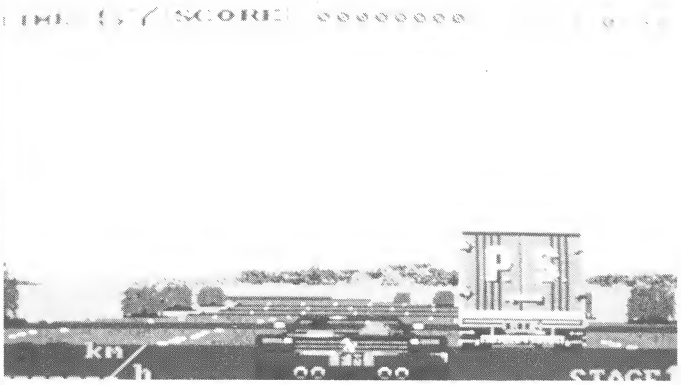
US BOLD

Daring low prices for 16-bit Gold titles

Top games software company US Gold has good news for 16-bit gameplayers this week with the launch of a new budget label.

Klassix is the 16-bit counterpart to the popular 8-bit budget label, Kixx – with Klassix games priced at £9.99 on ST, Amiga and PC. Gold is promising a line up of top favourites on the leading edge machines.

First games to be re-released on the Klassix label consist of the well known Sega racing-sim coin-op *Out Run* (ST, Amiga), classic golfing simulation fun from *World Class Leaderboard* (ST, Amiga, PC) and a vertically-scrolling shoot'em-up *Foundations Waste* (ST, Amiga) by Exocet Software. Other titles due out soon include Capcom coin-op conversions *Street Fighter* (ST, Amiga) and *Bionic Commando* (ST, Amiga).



• Counter tenner: Klassix to release *Out Run* as budget game

As reported in *Express* last month, US Gold has already cut the price of some its ST and Amiga coin-op conversions to £14.99 – including titles such *Vigilante, Last Duel* and *Human Killing Machine* – from the usual price point of £20-£25. US Gold frequently pre-empts universal marketing ploys, so its price slashing bodes well for further 16-bit price cutting throughout the industry. Other software companies are believed to be planning similar ventures in the near future.

ST goes popcorn

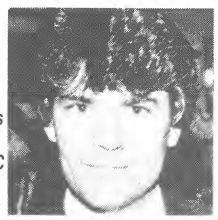
Next time you go and see a movie you might find a new star on the big screen. Atari is planning a series of cinema ads featuring the ST.

THAT FIGURES

C64 owners in North America spent $85 million on software last year, according to the Software Publishers Association. The largest slice of that went on games – a total of $62.6 million. Next came graphics packages at $6.3 million.

In contrast PC owners spent more than $2.25 billion dollars on software. American and Canadian computer owners forked out nearly $3 billion on software.

Atari's transputer techie to sally forth



• Gentleman Player: Whizzing off

Atari's well known technical whiz Les Player is to leave the company to help set up German 16-bit software highflyer GFA's UK operation.

Player, a familiar figure in computing circles, is responsible for the development of the Atari Transputer which has just started shipping. He has also been instrumental in getting the Pocket PC together and the Atari Robotics Kit which will be out within the next six weeks.

Unlike many hardware techies Player has not shied away from publicity and has often been on hand to outline Atari's releasable technical mysteries.

He will still be heavily involved in Atari helping GFA with products such as GFA BASIC, BASIC Compiler, Vector and Draft. That firm is enormously successful in Germany and recently decided to go it alone in the UK.

"I want to move on and achieve some personal objectives," Player told Express. "Being involved in the Transputer and other projects at Atari has been exciting. And by helping GFA I'll still be helping Atari."

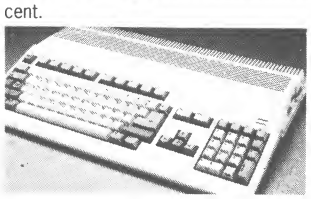
COMPUTER BOOM GATHERS PACE

More and more computers are being bought by the British public according to a survey published by leading market analysts Intelligent Electronics/ Dataquest.

Sales of personal computers in the UK soared by nearly 50 per cent in 1988 compared to the previous year. Total shipments in 1987 were 552,350. But in 1988 that figure had risen to just under 778,000 units.

Whilst this is great news for British computing some hardware manufacturers have not fared as well as expected. Despite its gallant attempts Commodore's market share dipped in that period from 4.2 per cent to 3.7 per cent. Whilst its flagship Amiga is undoubtedly selling handsomely it still lags a long way behind Atari's ST.

That firm saw its share rise from 5.6 per cent to 9.6 per cent. Astonishingly, Atari's market share is now only four per cent behind Amstrad's. In 1987 Amstrad was 16.3 per cent ahead. Its share has dipped from 21.9 per cent to 13.6 per cent.



• Amiga 3.7%: Still outsold by Atari ST

Report criticises classroom computer use

WHAT A WASTE

Schools are failing to prepare students for the world of computing by misusing the machines at their disposal, according to a report published last week by the schools inspectorate.

The report criticises mainstream educational thinking which still regards computing as a subject in itself rather than as an aid for all subjects. *Information Technology from 5 to 16* says that published schemes which teach children to simply operate computers have "little educational value". Simplistic procedures such as learning to copy files can "mislead parents, teachers and children".

The report goes as far as to suggest that computers should be used for almost all subjects. It argues that observation of children applying technology to different subjects reveals their ability to enhance performance.

It goes on to suggest that pupils use programs such as word processors, databases, spreadsheets, music packages and landscape simulations in subject such as English, History, Maths, Music and Geography. It even says that discussions on the role of Information Technology should be incorporated into Religious Studies.

The schools inspectorate points out that there is not enough computers to go round and that too many people are choosing computing as a study only to become disenchanted because the lessons appear to be irrelevant.

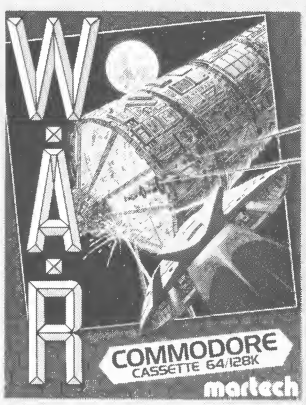
• Could do better: Criticism for schools with computers

WINNER CHASES YESTERDAY'S GAMES

A new software label has been launched which promises to re-release old games for new low prices.

The budget house – called Winner — is scouring a number of software houses for back catalogues which will be coming to you for £2.99. One of these is believed to be Activision.

Winner has already signed up a job lot of games from the recently closed down publisher Martech. First out will be the scrolling shoot-'em-up WAR which first saw the light of day in 1986. Winner is the sister label to the established Alternative.



• This means *WAR*: Martech Winner lot

DISABLED YOUNGSTERS OFFERED PC CHANCE

Disabled youngsters desperate to take up careers are being offered a chance through a new computer training centre in London's Docklands.

Enterprise Technology Docklands sets out to enhance disabled people's skills using a line up of PCs. The youngsters will be trained on the machines for a professional career.

When completely up and running the centre hopes to train 50 people a year. They will be taught basic computer skills over the year long course. Many, though not all, will go on to work in the computer industry.

The London scheme was spawned from a similar venture in Northern Ireland which has proved to be enormously successful. The London centre received £20,000 in initial funding from an educational trust.

Candidates with any level of disability can be accepted. It is hoped that it will be extended to include the able bodied in the long term.

And the PC Oscar nominations are .....

The PC Software annual "Oscar" nominations have been announced by the Software Publishers Association in the US.

The prestigious awards programme includes 89 companies and 41 categories. The most important section, Best of the Best, features *Adobe Illustrator 88, MicroSoft OS/2 Presentation Manager, MORE II, Q&A 3.0* and *WordPerfect 5.0*.

MicroProse and Ashton-Tate are among the few companies picking up five nominations.

In the entertainment sector *Who Framed Roger Rabbit, F-19 Stealth Fighter, Life and Death, Jigsaw, Beyond Dark Castle* and *Tetris* are in the running.

The business section is split into numeric and word processing packages. Ashton-Tate dominates here with the likes of *FullWrite Professional* and *dBase IV*. Others include *Ami, WordPerfect 5.0, FOXBase Plus* and *Ronstadts Financial*.

In the Technical Achievement area Mindscape's 3D arcade exploration adventure *The Colony* is mentioned as well as *Paradox 386* from Borland and *Norton Utilities 4.5*.

The fourth awards ceremony, and the biggest yet, will be held on May 23rd in San Diego.

TOP 20 *Full Price* GAMES

1	**Robocop** OCEAN	*Spectrum, C64, CPC, ST, Amiga, MSX*
2	**Operation Wolf** OCEAN	*Spectrum, C64, CPC, ST, Amiga*
3	**Fun School 2** DATABASE/MANDARIN	*Spectrum, C64, CPC, ST, Amiga, BBC*
4	**Dragon Ninja** OCEAN	*Spectrum, C64, CPC*
5	**Emlyn Hughes** AUDIOGENIC	*Spectrum, C64*
6	**Run the Gauntlet** OCEAN	*Spectrum, C64, CPC, ST, Amiga*
7	**WEC Le Mans** IMAGINE	*Spectrum, C64, CPC, ST, Amiga*
8	**Arcade Muscle** US GOLD	*Spectrum, C64, CPC*
9	**In Crowd** OCEAM	*Spec, C64, CPC*
10	**Middle Earth** MELBOURNE HOUSE	*Spec, C64, CPC, ST, Amiga, PC*
11	**Afterburner** ACTIVISION	*Spectrum, C64, CPC, ST, Amiga*
12	**Football Manager 2** ADDICTIVE	*Spectrum, C64, CPC, ST, Amiga, PC*
13	**Pacland** GRANDSLAM	*Spectrum, C64, CPC, ST, Amiga, MSX*
14	**Falcon** MIRRORSOFT	*ST, Amiga, PC*
15	**Double Dragon** MELBOURNE HOUSE	*Spectrum, C64, ST, Amiga, PC*
16	**Batman** OCEAN	*Spectrum, C64, CPC, ST, Amiga*
17	**Football Man. 2 Exp** ADDICTIVE	*Spectrum, C64, CPC, ST, Amiga, PC*
18	**Renegade 3** IMAGINE	*Spectrum, C64, CPC*
19	**Thunder Blade** US GOLD	*Spectrum, C64, CPC, ST, Amiga*
20	**R-Type** ELECTRIC DREAMS	*Spectrum, C64, CPC, ST, Amiga*

TOP TEN *Budget* GAMES

1	**Turbo Esprit** ENCORE	*Spec, C64, CPC*
2	**Treasure Island** CODE MASTERS	*Spec, C64, CPC*
3	**Joe Blade 2** PLAYERS	*Spectrum, C64, CPC, BBC, Electron, C16*
4	**Ghostbusters** MASTERTRONIC	*Spectrum, C64, CPC, Atari 8-bit*
5	**Shanghai Warriors** PLAYERS	*Spec, C64, CPC*
6	**Twin Turbo V8** CODE MASTERS	*Spec, CPC*
7	**Super Cycle** KIXX	*Spectrum, C64, CPC*
8	**Fast Food** CODE MASTERS	*Spectrum, CPC*
9	**Pinball Sim** CODE MASTERS	*Spectrum, C64, CPC*
10	**Who Dares Wins 2** ALTERNATIVE	*Spectrum, C64, CPC, BBC, C16, MSX, Atari 8-bit*

RE re-entry • NE new entry • Last week's positions
Compiled by Gallup
The charts shown are based on the Open Market, that is retailers who stock a broad range of products. All charts shown are copyright of Gallup.

SUPER PSION UNLEASHED

British handheld computer leader Psion has unveiled two new flagship models of its big selling Organiser II machine – and the firm says the spec has been chosen by the Psion owning public.

The new LZ and LZ64 boast a number of new features asked for by users of the older models. Psion says it conducted a survey amongst its customers and incorporated the results into the new machines.

The features include:

- Four line screen as opposed to a two line screen
- An 80 character screen - older models only had 32.
- 64K of internal RAM instead of 32K.
- In built software which replaces external datapaks.
- An extended diary
- International dialling codes
- Enhancements of the stopwatch, password protection and basic calculator.

"We conducted several polls in order to find out what existing Organiser owners wanted to see," offered a Psion spokesperson. "They're really in the best position. I think the changes are extensive even though the new models are the same size and look the same."

Simultaneously, Psion has dropped the prices of its entry level organisers the CM and XP Pro by £20.

They now cost £139 and £79 respectively. "Not much more expensive than a fancy calculator," said the spokesperson.

• You said it: Public opinion has shaped the new Organiser

Coders golden oldies pondered

Code Masters' budget hits of yesteryear may well appear again on a series of compilations – the firm is pondering launching the first into the UK soon.

The Best of Code Masters Volume One **features four previous number one hits – *Ghost Hunters, Pro Snooker Sim, Pro Ski Sim* and *Transmuter*. Originally, the package was intended for European gamers only. But the Coders reckon they might do well here.**

Suggestions that the compilation will cost £10 (some £2 more than if you bought the games individually when they were launched) have been all but scotched. "We haven't decided yet but it may well be around £8," was the Code Masters line.

• Catching Code: New compilations on the way

PICTURE THE SCREEN

• Double vision: New high-res PC monitors from Taxan

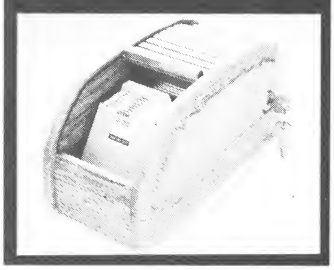
Monitor mogul Taxan has launched hi-res monitors both priced at less than £500.

The high resolution IBM compatible monitors, claims Taxan, will suit bargain hunters looking for a low cost solution. The 12 inch 685 and 14 inch 785 cost £475 and £495 .

Boxing clever

For the computer user who wants to avoid tacky plastic desktop peripherals comes a disk box made of wood.

Supplier Action reckons people with "front office" micros are no longer satisfied with having disks strewn hither and thither and want nice and stylish boxes. If you fancy this wooden offering prepare to be parted with £45. More on 0800 333 333.



Atari pledges Hillsborough aid

Atari and leading retailer Silica Shop have pledged cash for the grieving families of those killed at the recent Hillsborough soccer disaster.

The two firms will stage a charity soccer match this Saturday which they hope will raise hundreds of pounds. The game – due to be held at Bexley Heath – will feature staff from both companies. The amount of money raised will depend on number of goals scored.

"It will be an exciting match but there's a very serious edge to it," said an Atari spokesman. "I hope its a high scoring match." The match starts at 10.00. Supporters are welcomed to come along.

Elsewhere on the football front Commodore will be pleased with the news that Chelsea have regained their place in the First division. The team took a turn for the worse when the Commodore sponsorship deal was first secured but a healthy season secured an early promotion.

NEC

PC Engine

"A NEW AGE HAS DAWNED"

Chan + Chan

Vigilante

Galaga 88"

Victory Run

R-Type 1

WARNING!

THE ONLY QUALITY CONTROLLED & APPROVED PC ENGINE IS THAT SOLD BY MICRO MEDIA.
WE SUPPLY EXCLUSIVELY TO THE TRADE. DO NOT BE MISLED BY GOODS WITHOUT FULL MICRO MEDIA BACK-UP

ONLY MICRO MEDIA PC ENGINES ARE SUPPLIED WITH A BRITISH JOYSTICK INTERFACE FROM £199.95

"The PC Engine is not an expensive console, it's a cheap arcade machine"

The Games Machine

"Forget Nintendo and Sega, they are not even a spit in the ocean in terms of power and gameplay. Even the Amiga would be very hard pushed when you come up against THE MOST POWERFUL CONSOLE IN THE WORLD"

Computer and Video Games

"No flicker, detailed and smooth. Oh gorgeous!!!"

Computer and Video Games

"Games on the PC Engine are, quite simply, the best you've ever seen. It's the most impressive piece of video game hardware I've ever seen"

Geoff Minter, The Nature of the Beast

"The PC Engine is no fantasy"

Computer and Video Games

IN AN IDEAL WORLD THE GAMES CONSOLE WOULD OFFER YOU

WE ACCEPT EXPRESS VOUCHERS

- Unsurpassed software excellence
- Arcade-perfect graphics
- Multi-channel stereophonic sound.
- State-of-the-art micro circuitry
- The most compact design in the world.
- Unparalleled expandability — designed with the future in mind
- Instant game load and access (no waiting for disks or tapes)
- Multi-player interaction
- The fastest running speed of any games machine in existence.

WELCOME TO THE IDEAL WORLD!

HARDWARE — Look out for the latest computer innovations available on the PC Engine such as a portable colour LCD screen. How about a CD Rom player capable of orchestral sound tracks and true voiceovers with previously unheard of storage capabilities. Imagine if it could double as a top of the range hi-fi compact disk player with amazing software drives facilities.

SOFTWARE — All titles £29.95. R-Type 1, Space Harrier, Chan + Chan, Victory Road, Fantasy Zone, The Legendary Axe, Vigilante, Galaga 88", R-Type 2, Wonderboy. These titles represent a small selection of the PC Engines extensive software library. Send SAE for more details.

Please send me the following:

SCART PC ENGINE — for use with monitors equipped with Scart/Euro connectors at £199.95 _____

PAL PC ENGINE — For use with standard British TV sets at £224.95 _____

SCART PC ENGINE with PHILIPS CM8833 COLOUR MONITOR at £399.95 _____

Add £4.95 towards p & p SUB TOTAL _____

Please supply the following games at £29.95 each

1. . . . . 2. . . . . _____
3. . . . . 4. . . . . _____
5. . . . . 6. . . . . _____
7. . . . . 8. . . . . _____
9. . . . . 10. . . . . _____

TOTAL _____

Name . . . . . Tel. . . . . .

Address . . . . . .

. . . . . .

. . . . . .

I enclose a cheque/PO for . . . . . .

Expiry Date . . . . . .

Visa/Access Card No. . . . . .

Signature . . . . . .

or tick box for weekly payment details ☐

DEPTNCE 3The Moor Hall, Ludlow, Shropshire, SY8 3EG.
TEL: 0584 75604, FAX: 0584 75387

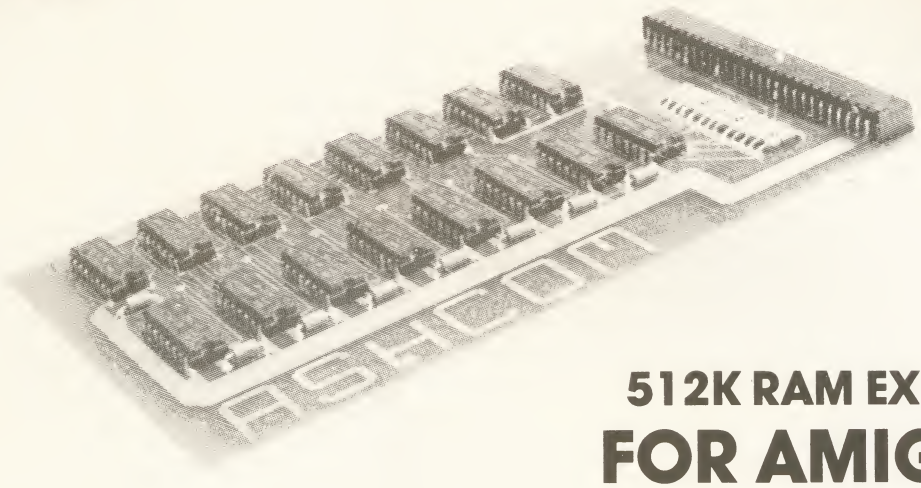
Trade Enquiries Welcome

MICRO MEDIA

ACCESS

NEW ASHCOM

VISA
VISA
(0530) 411485



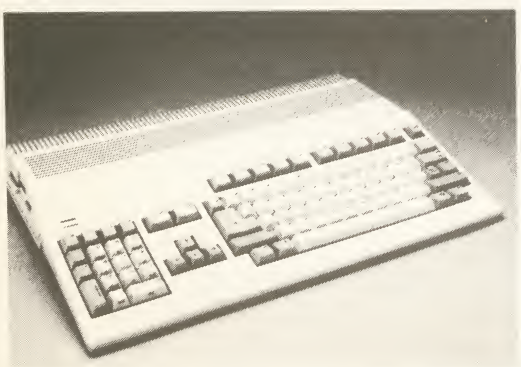
512K RAM EXPANSION
FOR AMIGA 500
ONLY £99.95 INC VAT

We Accept EXPRESS VOUCHERS

We Accept EXPRESS VOUCHERS

ONLY FROM ASHCOM, 10 THE GREEN, ASBY-DE-LA-ZOUCH, LEICESTERSHIRE, LE6 5JU. TELEPHONE (0530) 411485

THE BIGGEST EVER AMIGA PACK



Probably the BIGGEST Amiga pack ever launched! Only from Star UK! This pack includes: Amiga A500, Workbench 1.3, Very First Tutorial, Basic, Amegas, Art of Chess, Barbarian, Buggy Boy, Ikari Warriors, Insanity, Mercenary, Terrorpods, Thundercats, Wizball, AND Mouse Mat, 50 Capacity Lockable anti-static diskette holder, Quickshot 2 joystick, Amiga A500 leather-type dustcover AND Mystery £25 software package!

ONLY £399

INCLUDING VAT & POSTAGE AND PACKING.

We also stock most other makes of computers, peripherals, software etc. Scotland's biggest computer group! Call us now for a quote on your home or business system.

AMIGA
THE BIGGEST EVER AMIGA PACK

ONLY FROM

STAR U.K.
COMPUTER SYSTEMS LTD

We Accept EXPRESS VOUCHERS **50 BRIDGE STREET, ABERDEEN. AB1 2JN. TEL 0224 593024** We Accept EXPRESS VOUCHERS

Our Showroom is only 1 mile from Junction 23. M6. Just Past, Haydock Park Racecourse (Open Six Days)

COMPUTERS SADDLER COMMUNICATIONS

(Please ask for M.O. Dept. quoting NCE)
Telephone (0942) 719122 (24hrs)
Fax: (0942) 271226

Saddler Computer Services Ltd, 71/77 Warrington Road, Ashton-in-Makerfield, Nr Wigan. WN4 9PJ

AMSTRAD PC1512/1640

PC 1512	SD	MD	£366.00
PC 1512	SD	CD	£444.00
PC 1512	DD	MD	£444.00
PC 1512	DD	CD	£522.00

SPECIAL OFFER - Buy an Amstrad DMP 3160 Printer with any PC1512 this month for only **£95.00**

PC 1640	SD	MD	£455.80
PC 1640	SD	CD	£545.00
PC 1640	SD	ECD	£630.00
PC 1640	DD	MD	£519.00
PC 1640	DD	CD	£608.00
PC 1640	DD	ECD	£699.00
PC 1640	HD	MD	£699.00
PC 1640	HD	CD	£786.00
PC 1640	HD	ECD	£875.00

TV ADAPTOR

NOW FOR THE AMSTRAD PPC AND 1640 COMPUTERS

PPC	**£36**
PC1640	**£41**

FULLY REFUNDABLE IF UNHAPPY WITHIN 7 DAYS

EXTERNAL 5 1/4" D/D FOR THE PC 2086/PC200 ONLY *£109*

AMSTRAD PORTABLES

PPC 512	SD	£372.90
PPC 512	DD	£482.90
PPC 512	DD + 12" MD	£507.00
PPC 640	SD	£456.71
PPC 640	DD	£565.71
PPC 640	DD + 12" MD	£589.00

NEW!

PORTABLE HARD DISK DRIVES FOR AMSTRAD PPC'S

CUMANA 20Mb	**£395**
CUMANA 30Mb	**£420**

REMEMBER:

Our knowledgeable staff are always willing to give help and advice to help you choose what's best for you!

THE NEW AMSTRAD PC2086 RANGE

SD 12MD (SINGLE DRIVE WITH 12" MONO)	£565
SD 14CD (SINGLE DRIVE WITH 14" COLOUR)	£695
SD 12HRCD (SINGLE DRIVE WITH 12" HIGH RES. COLOUR)	£785
SD 14HRCD (SINGLE DRIVE WITH 14" HIGH RES. COLOUR)	£865
DD 12MD (TWIN DRIVE WITH 12" MONO)	£670
DD 14CD (TWIN DRIVE WITH 14" COLOUR)	£800
DD 12HRCD (TWIN DRIVE WITH 12" HIGH COLOUR)	£890
DD 14HRCD (TWIN DRIVE WITH 14" HIGH RES. COLOUR)	£970
HD 12MD (SINGLE DRIVE WITH 30 MEG HD AND 12" MONO)	£890
HD 14CD (SINGLE DRIVE WITH 30 MEG HD AND 14" COLOUR)	£1020
HD 12HRCD (SINGLE DRIVE WITH 30 MEG HD AND 12" HIGH RES. COLOUR)	£1110
HD 14HRCD (SINGLE DRIVE WITH 30 MEG HD AND 14" HIGH RES. COLOUR)	£1190

SPRING BUNDLE

SPECIAL OFFERS (When purchasing any 2086 this month)
LQ3500 + Lotus.....£335.00
LQ5000 + Lotus.....£445.00

PRINTERS

CITIZEN 120D	£128
AMSTRAD 2160	£133
AMSTRAD 3250 di	£169
AMSTRAD 3500 di	£258
AMSTRAD DMP 4000	£260
AMSTRAD LQ5000	£335
CITIZEN HQP 45	£395
BROTHER HR20	£380
+BROTHER HL8	£1540

WORD PROCESSORS

PCW 8256	£316
PCW 8512	£399
PCW 9512 (Trade in offer - Please call for details)	£404

NEW!

AMSTRAD VGA MONITORS!

12" MONO DISPLAY	£96
14" COLOUR DISPLAY	£240
12 HIGH RES. COLOUR MONITOR	£336
14" HIGH RES. COLOUR MONITOR	£432

HARD CARDS

MINISCRIBE 20Mb	£192.50
MINISCRIBE 30Mb	£203.50

NEW!

FOR THE OFFICE, SCHOOL AND HOME

SINCLAIR PC 200

16 Bit Processor, 512K RAM, Built in TV Modulator, 3 1/2 D/Drive 2 IBM Comp. Exp. Slots parallel Cent. Port and more... Call us Today!

Without Monitor	£275
Mono Monitor	£359
Colour Monitor	£439

SOFTWARE (Please specify 5 1/4" or 3 1/2")

Wordstar Express (Amstrad)	£53.00
Wordperfect Personal (Sentinel)	£106.00
DTP Lite (GST)	£36.00
Timeworks (GST)	£95.00
Mini Office Professional (Database)	£26.00
Infomaster (Amstrad)	£49.00
dBase IV (Ashton-Tate)	£385.00
Supercalc 3.21 (Amstrad)	£53.00
Lotus 123 (Lotus)	£289.00
Accounts Master (Amstrad)	£106.00
Integrated Accounts (Map)	£105.00
Accountant (Sage)	£96.00
Accountant Plus (Sage)	£159.00
Turbo Pascal V5 (Borland)	£69.00
Autoroute (Next Base)	£109.00
Autoroute Plus (Next Base)	£224.00

THE star COMPUTER PRINTERS

LC-10

LC10 £185
LC10 COLOUR £205

ORIGINAL UK VERSIONS ONLY! NO CHEAP IMPORTS

- Low cost 9 pin, 10" printer
- 144cps Draft, 36cps Near Letter Quality
- Centronices or Commodore versions available.
- 4K buffer (Commodore version 1 line)
- Automatic single sheet load, push tractor and "Paper Parking" standard
- Colour Version Available

LC24-10

£272

- Low cost Letter Quality, 24 pin 10" printer
- 170cps Draft, 57cps Letter Quality
- Industry compatible.
- 7K buffer expandable to 39K
- Selectable font & RAM cards.
- Automatic single sheet-load, push tractor and "Paper Parking" standard.
- Eight Resident Fonts.

Laser Printer 8

£1360

- 8 page per minute, series 2 laserprinter
- 1 megabyte memory standard, expandable to 2 megabytes.
- Centronics and serial interfaces fitted as standard.
- 4 standard emulations: HP, IBM, Epson, Diablo.
- First toner cartridge included.
- 12 Months On-Site Warranty included.

We Accept EXPRESS VOUCHERS

All Prices exclude VAT and Carriage
SERVICE CONTRACTS AVAILABLE FROM ONLY £36 PER YEAR
EDUCATIONAL & EXPORT ENQUIRIES WELCOME
Please send cheque today, payable to:

Access

Saddler Computer Services Ltd
or phone us with your Access/Visa details.
All items * will be despatched same day.
(Cheques over £500 subject to clearance)
*Subject to availability

VISA

We Accept EXPRESS VOUCHERS

We Accept EXPRESS VOUCHERS

PRICES SUBJECT TO CHANGE WITHOUT NOTIFICATION

CARRIAGE

POST (3-4 Days)
Value Below £100.00 £4.00

COURIER (Next Working Day)
Value Below £100.00 £10.00
Value Over £100.00 (Printer) £6.00
Value Over £100.00 (Computer) £8.00
Value Over £100.00 (Computer & Printer) £10.00

COURIER (Saturday Delivery)
Call for Prices

COURIER (Same Day Delivery)
All items (subject to availability) despatched within 30 minutes of ordering, to be delivered to your door in the time it takes to get from Wigan to where you are (by road). Call for details and prices.

Special Reserve Official Secrets *Special Reserve* Official Secrets *Special Reserve* Official Secrets *Special Reserve* Official Secrets *Special Reserve*

JOIN THE CLUB!

We Accept Express Vouchers

We Accept Express Vouchers

If you're looking for the best prices, best games, best offers and best service, then join ***Special Reserve***. Or join ***Official Secrets*** if you're looking for more...

Special Reserve

Best games at best prices

All the best games, carefully selected and available to members only at truly extraordinary prices. We're miles cheaper than elsewhere, so cheap that we can't advertise our individual prices. Below are a selection of offers for two games at about the same price you would normally pay for one. You can buy a pair of games at the same time as joining - or join now and select individually from our catalogue of over 700 products. There is no obligation to buy anything.

Games Pick a pair of games

Below is a small selection from our catalogue. We supply games for all popular computers. Prices shown are the combined price for both games including UK postage.

		AMIGA	ST	IBM
ARCHIPELAGOS	ELIMINATOR	21.48	22.48	
BAAL	NIGEL MANSELL'S GRAND PRIX	17.46	17.46	
BARBARIAN 2	XENON	19.98	19.98	
BLOOD MONEY	ELIMINATOR	23.98	23.98	
CYBERNOID 2	NIGEL MANSELL'S GRAND PRIX	17.48	17.48	
DRAGON NINJA	TEENAGE QUEEN	23.46	20.96	
DUNGEON MASTER (AMIGA 1 MEG)	PURPLE SATURN DAY	23.48	22.48	
ELITE	CHAMP FOOTBALL (AMERICAN)	20.46		22.46
EMANUELLE	TEENAGE QUEEN	19.98	19.98	
F16 FALCON	STARGLIDER	24.94	21.48	30.94
FEDERATION OF FREE TRADERS	XENON	27.98	27.98	
FISH!	DEFENDER OF THE CROWN	22.42	22.42	27.46
GALDREGON'S DOMAIN	ELIMINATOR	18.96	18.96	
HEWSON PREMIER COLLECTION	PURPLE SATURN DAY	26.48	26.48	
HYBRIS	THREE STOOGES	20.98		
KING OF CHICAGO	DEFENDER OF THE CROWN	25.94	23.44	29.98
KRISTAL	PURPLE SATURN DAY	24.98	24.98	
LOMBARD RAC RALLY	VIXEN	18.96	18.96	21.46
MILLENNIUM 2.2	DEFENDER OF THE CROWN	24.94	24.94	29.98
OUT RUN EUROPA	CAPTAIN BLOOD	18.98	18.98	23.98
POPULOUS	PURPLE SATURN DAY	24.48	24.48	
REAL GHOSTBUSTERS	SKYCHASE	23.98	20.98	
ROBOCOP	VIXEN	19.96	17.46	19.96
ROCKET RANGER	DEFENDER OF THE CROWN	25.94		30.98
RUN THE GAUNTLET	VIXEN	19.98	17.48	19.98
SPEEDBALL	VIXEN	19.98	19.98	23.98
STEVE DAVIS SNOOKER	NIGEL MANSELL'S GRAND PRIX	17.48	17.48	
SUPER HANG ON	XENON	24.98	20.98	
SWORD OF SODAN	TEENAGE QUEEN	22.48		
ULTIMA V	DEFENDER OF THE CROWN	26.42	26.42	31.46
VINDICATORS	SKYCHASE	18.98	19.98	
ZAK McKRAKEN	CAPTAIN BLOOD	24.98	24.98	26.98

Hardware and Peripherals

AMIGA A500 COMPUTER WITH TV MODULATOR **349.99** !!!!
(Price includes VAT and delivery. Please pay by cheque.)

MP135+ PRINTER by MICRO PERIPHERALS. **134.99**
EPSON COMPATIBLE, 80 COL, 135 CPS, F & T FEED, NLQ, 2 YEAR WARRANTY

MONITOR STAND FITS OVER ST or AMIGA **17.99**

SONY 3.5" DS/DD DISK WITH LABEL **99p each**

KIND WORDS 2 AMIGA WIMP WORD PROCESSOR WITH SUPERFONTS **31.49**

MP135+ PRINTER RIBBON	3.49	PRINTER LEAD FOR AMIGA or ATARI ST	9.99
80 COLUMN PRINTER STAND	13.99	DUNGEON MASTER SOLUTION BOOK	1.50
MOUSE MAT (FOAM)	4.99	MOUSE MAT (SEMI RIGID QUALITY)	7.99
KONIX SPEEDKING AUTOFIRE JOYSTICK	9.99	KONIX NAVIGATOR AUTOFIRE JOYSTICK	11.99

Club Privileges All club members benefit from:

- Special offers: at prices you might not believe!
- Bi-monthly Buyer's Guide each with details of 40 games, building to a valued reference.
- Membership card with privilege number, and folder for the Buyer's Guides.
- 24-hour despatch of stock items. Over 500 lines in stock.
- Each game sent individually by 1st class post. Most will fit through your letter-box.
- 7-day sales hotline, manned 9am to 8pm weekdays, 10am to 5.30pm weekends.
- Written notification of unexpected delays.
- New titles may be ordered in advance and will be despatched upon publication.
- Instant refunds available on request for delayed titles.
- No commitment, no obligation to buy anything and no "minimum purchase".

Official Secrets

Confidential 32-page A4 bi-monthly glossy magazine

Confidential is written for people who take their fun seriously. If you are into Adventure, Strategy, FRPs, MUGs, PBMs, D&Ds, or if you would simply like to see more from behind the scenes then Confidential is essential reading. Regular features include Personnel File, Dead Letters, The Man in Black, Feature Articles, Brain Teasers, Diary, News, Competitions, and The Boss Upstairs. Club participation is welcomed.

Gnome Ranger Level 9's award-winning 3-part adventure

Starring Ingrid Bottomlow. "Go out and buy *Gnome Ranger* pronto" said Atari ST User. If you already did please tick the box for a Surprise Alternative.

Help-Line Manned each week-day

Advice and hints to help you solve any game bought from us.

Special Reserve Included in the membership fee

All the features and benefits of Special Reserve membership .

Myth A mini-adventure by **Magnetic Scrolls**

Written exclusively for members of Official Secrets and, amazingly enough, included in the price of membership. Set in Ancient Greece, you play the part of a young god striving to prove himself worthy of immortality. You'll meet the Ferryman, have a chance to cheat Death, and do battle against the nine-headed Hydra guarding the gates to the Underworld. *Myth* includes the state-of-the-art Magnetic Scrolls parser and those incredible graphics. Available for most computers - disk only. Only to members of Official Secrets.

***Myth* was rated at 90% by Keith Campbell of Commodore User. He said "Don't be put off by it being a mini-adventure.... text undreamed of in those bygone days."**

To order please write, or complete the coupon, or telephone us on **0279 600204.** Please note that there is a surcharge of 50p per game for orders placed by telephone.

Order Form Non-members please add the membership fee

Name _____

Address _____

_____

_____ Post Code _____

Computer _____ *5.25"/*3.5"/*3.0"/*TAPE

Payable to: **Special Reserve** or **Official Secrets**
P.O. Box 847, Harlow, CM21 9PH

Special Reserve membership £4.00 UK, £5.00 EEC
or
Official Secrets membership £19.95 UK, £24.95 EEC
with Gnome Ranger ☐ or with Surprise Alternative ☐ N.C.E. £

Game _____
Game _____ £

*CHEQUE/*POSTAL ORDER/*ACCESS/*VISA/*AMEX
(Including Connect, Mastercard and Eurocard) **TOTAL** £

Credit card expiry date _____

* Delete where applicable

Overseas orders must be paid by credit card, please add 70p per game for EEC Post

Special Reserve and Official Secrets are trading names of Inter-Mediates Ltd.
Registered Office: 2 South Block, The Maltings, Sawbridgeworth, Herts CM21 9PG.
Registered in England Number 2054713. VAT reg. no. 424 8532 51

CELEBRITY SQUARES

Did the self styled 'Field Marshal' Mellish play the same 'Arnhem' that became an essential purchase for Spectrum war game fans?

His highly critical review (*Express* 23) indicates a level of prejudice I have rarely encountered in a reviewer. Why oh why must reviewers insist on rating games of this genre as if they were some mutant arcade offering? Mellish makes comments on graphics and sound which are unfair as both are functional for the purpose.

Perhaps you could employ reviewers with a certain empathy as opposed to hostility – I doubt if you would ask Germaine Greer or Mrs Whitehouse to review 'Teenage Queen' for example.

I'm not asking that every computer war game be given a football review, merely that such products are compared with like, and not a completely different type of game.

Duncan Maggs, Great Barr, Birmingham

• Get Mary W. to review 'Teenage Queen', says Duncan Maggs

● ***Games reviews are subjective things and I'm afraid there's little we can do to change that. Getting facts wrong is one thing, but if we don't like a game, we're bound to say so. It would be a strange system, only letting a reviewer write about a game if they liked it!***

But I'm intrigued by your celebrity reviewers. It is an excellent idea. How about getting Mark Thatcher to review Autoroute, Neil Kinnock to review Mini Office's Thesaurus, Elizabeth Taylor to review GEM, Tony Benn to review LISP?

PROTECTION RACKET

On the subject of making backup copies of software, why don't more software houses employ the method used by Electronic Arts on *Fusion*, and Sierra on *Leisure Suit Larry in the Land of the Lounge Lizards*? You are encouraged to make a backup of the game disk but when loading the copy you must, at a given point, insert the original for verification. When it is completed you put the copy back in the drive and presto! You play the game without fear of destroying your original and the software house protects themselves from pirating.

Andrew Ward, North Walsham, Norfolk

● ***It certainly lessens the chance of your original being corrupted, but it can be a bit annoying to have to dig out your master disk to carry on playing the game: not so much presto as molto agitato. And if your master does go down you're still stuck.***

Other possibilities include asking you to enter the eighth word on the fifth line of page 152 or whatever of the accompanying novella. Doesn't work for shoot-'em-ups, though, as it's bound to be a guessable word like phaser, shield, or mutant.

So I suppose I'm agreeing with you; it seems the least worst solution.

TICKING OFF

In answer to the letter 'Student Games' in *Express* 23, you mentioned that "Computers on tick are only from Commodore..." This is not so: so far, to my knowledge, companies involved in the NUS Futures scheme are Acorn, IBM, Commodore and Amstrad. Acorn offer the least generous discounts. IBM, on the other hand offer amazing student discounts, £1,800 machines slashed to £900 for example.

The machines must be bought there and then, or with a special 'Futures' loan from the Midland Bank. An information pack is available from the NUS, which, as well as explaining a lot of computer jargon and listing specs for various machines, helps you decide which computer you need to help with your studies.

K Simpson, London

MYSTERY PRIZE WINNER

● ***For giving students and prospective students everywhere this valuable information, we're making this our letter of the week. Drop us a line telling us what machine you own and we'll send you a mystery piece of software. (Though you may not be popular with the lecturers and tutors whose attendances fall as everyone spends the mornings playing games on their STs, PCs and Amigas).***

The NUS, by the way, is on 0457 468003.

EXPRESS MAIL

Dear Reader

More pages packed with another selection from our postbag. Have you got something to say? Make your voice heard in computing's liveliest letters page!

Send your contributions to:

Express Mail, 4 Queen Street, Bath, Avon BA1 1EJ

PS. Sorry, we just don't have the time to give personal replies, whether you include an SAE or not. We're too busy putting Express together!

JACK'S OFF AGAIN

I suppose I'll have to reply to your rather scathing comments about me (*Express* 23).

I agree, no one is forcing me to make and use pirate copies of software, but I only copy and use stuff which I can't afford to buy, and where possible I try to use PD stuff if I can't afford the 'real' thing. So why can't software companies pay themselves, their programmers etc. less, and no cries of "but we only earn a pittance anyway".

If you would care to look in a book called "Success in Software" published by Superior Software on page 9 about half way down it mentions "Tim Tyler, a 17 year old from Exeter, who wrote the acclaimed *Repton* and *Repton 2* games. They quickly rose to the top of the BBC micro charts and within 18 months Tim has earned £41,217.15 in royalty payments". This works out at £27,478,10 per year in 1987's figure so it is probably somewhere in the region of £30,000 per year now. The programmers are earning something in the region of 2 to 4 times the salary of those who keep them in business, so who's conning who!

I know what I am doing is illegal, but I can't afford to pay the over inflated prices of today, so I won't be giving you my real name, I don't want the guys from FAST knocking on my door do I?

My name is not a tribute solely to the Rolling Stones, but I took the name from the character in the film "Jumping Jack Flash" starring Whoopi Goldberg, you ought to see it, it's really good.

Jumping Jack Flash

● ***Well, we're doing a special feature on where the money you pay for your games (or not, in your case) goes. Sorry, but I just don't believe you when you say you only copy games you can't afford; it's like saying you only steal things you can't afford, so that must be OK then. And if you don't like the fact that some programmers earn lots of money, you're welcome to write your own games.***

A quick poll of the Express offices rates Jumping Jack Flash at one to two stars (out of five). Whoopi is OK in serious roles (Colour Purple) but we don't rate her as a comedienne.

POWER TO THE PCW

Express is an excellent magazine – I wouldn't buy any other.

(REM: Hmm, the mailmerge seems to work OK – I hope one of your rivals gets its version at the same time, that would be a hoot).

Now, following the format of most letters: Nah Nah Ne Nah Nah – my old ZX81 is better than your Archimedes, it's cheaper, more compact, a prettier colour – and it's certainly got more software...

A plea to some of your correspondents. Don't be so dogmatic/ humourless/ aggressive about other people's machines – buy the one that best suits your needs/ pocket/ preferred software, and enjoy it – but that doesn't stop you respecting other people's choice, even if they are richer, poorer, or just having differing needs or tastes Also, don't laugh too loudly when they tell you that they own a QL.

OK, that may be a bit too much to ask – you laugh if you want to.

Finally, a few questions:

1 Can we have more articles on the Amstrad PCW – Yes, the truth is out, I own one – what do you mean "the naff print out was a dead give away?"

2 Will there ever be a world without war, famine and disease?

3 Will there ever be a Prime Minister who isn't called Margaret Thatcher?

4 Will Database ever release the Spell checker/ Thesaurus for *Mini Office Professional*?

5 Will you dare print this, in case I have sent a version to another magazine?

May your disks never corrupt.

Ron Grant, Sheffield

● ***Naff printout? Not at all! Tell me another word processor that can write in twenty different fonts and in 24-pin quality Roman, Cyrillic, Greek, mathematical symbols up to post doc level and cope with any accents and alphabets in any European language except Macedonian and Tartar!***

1 Rest assured we'll be covering every single new release for the PCW this year in great detail. I've put half a page aside in a September issue to cover it.

2 Well, there's more chance of that than of Dragon's Lair coming out on the PCW.

3 Sorry, we don't discuss politics in Express.

4 Looks like it's a toss-up between which happens first: Database releasing their spell checker/ Thesaurus or Britain getting a Prime Minister not called Margaret Thatcher. 5 Of course not. Do you think we're gullible or something?

HIDDEN MESSAGES?

I recently bought a *Mini Office 2* for my CPC6128 and promptly started to create a spreadsheet for my monthly outgoings and following the menu instructions I saved the spreadsheet. Then when I catalogued the disk it showed a spreadsheet 1 and a spreadsheet 2. I thought this a bit odd so I booted my CPM+ and at the prompt entered the type command. I then TYPEd spreadsheet 1 to which came the reply, "The bugs are bigger, better and free". I was gobsmacked by this remark so in a panic I typed at the prompt DIRSYS and found a file named KNIFE.BIN. I then did a TYPE of KNIFE.BIN which then revealed a little gripe message. Database sent a replacement with the same result.

I rang Database asking for positive assurance that the disk was not corrupted but as yet I have had no reply. Could you please help?

Duncan M Cox, Sheffield

● ***Doesn't seem anything serious to me – Mini Office has been out years and anything dangerous would have been noticed by now. You've got into those funny messages that programmers like to leave hanging around in their code. Mini Office owners can have fun examining the contents of KNIFE.BIN which say rather interesting things about sheep, Database, and car park attendants.***

FOR AMIGA 50p

I purchased my Amiga 500 about 3 months ago, and was, as I imagine are most new Amiga owners, dismayed at the price of most decent software. It was with much relief then that I obtained the address of Ray Burt-Frost, as he has his own non-profit making, low cost Public domain Software Club.

My reason for writing is that recently, many Amiga PD groups have sprung up, but some charge up to £3.00 a disk!! Ray, on the other hand, merely asks for the blank disks and a nominal copying fee to cover wear and tear on his overworked Amiga!

His collection is second to none, containing such gems as the *Walker Demo*, *Eddie Murphy Live!*, and the complete *TBAG* collection. His address is: **Ray Burt-Frost, 169 Dale Valley Road, Hollybrook, Southampton, SO1 6QX: Tel 0703 785680**

Damion Way, Harpenden, Herts

● ***Ray says that he'll send you a directory of the PD stuff he has if you send him a blank disk and a stamped addressed jiffy bag for its return. He believes that PD should be as low cost as possible and only charges about 50p per disk. Good on yer, Ray.***

SLUGS AND SNAILS, MORE LIKE

Readers thinking of accepting Mr Alan Sugar's offer of fifty quid for their old typewriter when they buy one of his PCWs should think carefully before they accept.

My PCW developed a small printer fault back in early February. Over two months later I am using my old Olivetti typewriter. One letter to Amstrad took six weeks to answer and then only said how good the PCW is. Another was signed by a Mrs Muldouney who when I tried to phone her appears to have not worked for the company for some months.

Eight weeks after taking my PCW in for repair the retailer, Twillstar Ltd, went into liquidation. Now I am having hassles with a Mr Dunn the company's accountant and the return of my property seems nowhere in sight.

My last letter sent recorded delivery to Mr Sugar is of course unanswered after two weeks, presumably the ghostwriters have a malfunction or Mr Sugar is too busy celebrating his appearance in the Sunday Times '200 Richest men in Britain' feature.

The shame is I was very pleased with the damned thing, but I'm still glad I kept my Olivetti.

Keith Mason, London

● ***It's all an unfortunate story: PCWs generally are very reliable and robust. Amstrad hasn't got the best name in customer service though (nor in helping journalists).***

MAKE A CLAIM

I was amused to read about the introduction of DSS Advice Computers (news, *Express* 23). Will it be able to withstand the verbal and physical abuse human advisers have to take at present?

I say at present because as from next year the DSS is computerising itself; all London's giros will be issued from Wigan!

I was not too chuffed at the word 'unbiased' in your report – seems to suggest we merely human advisers in the DSS deliberately misinform claimants which is a bit of a slur on 20,000 people whose jobs will eventually go under the new system!

Finally, I've enjoyed the cartoon series which has appeared with each 'microbiography'. A bit stereotypical – or should that be monotypical for all computers apart from the Amiga? – but generally they have raised a smile before I and my colleagues brave the claimants on a Thursday morning!

Don Griffith, Hammersmith

● ***I don't think you need worry about crossing over to the other side of the counter yet: apparently the computers are not intended to replace human advisers, only supplement them. And as for the slur that DSS people deliberately misinform claimants, you said all that, not us! All we said was that the advice the computers give isn't going to be biased, as you might otherwise expect if the expert system giving it is inexpertly written.***

They don't look likely to make an appearance for many years yet, until they've undergone extensive test – presumably to see how much verbal and physical abuse they can withstand.

As for the cartoons, the last of which is in this issue, we make no apology at all for the archetypes portrayed. We had a great laugh deciding what to make each one and the cartoonist did a brilliant job getting all the fiddly details we asked for in each time. Grateful thanks (and money) are due to Nick Davies.

HARD TO COMPREHEND

Maybe I've got the whole idea of disk storage wrong, but I've always thought that the more you put on the disk the less space there was and if you erased something more was made available. However, your *Learning Curve* (*Express* 22) has shown, the error of my beliefs. When the file 'junk – erase' was erased from the disk a whole 36K of memory suddenly became unavailable. Where does one get such a wondrous thing as a Hard Disk of Infinite Storage Capacity?

Andrew Ranson, Scunthorpe, South Humberside.

● ***Each screen had to be 'grabbed' – i.e. an image of the screen saved to the hard disk. Therefore each subsequent picture in the sequence shows less of the hard disk available, because space has been taken up by the preceding grabbed screen.***

Hard disks of infinite capacity are available from MegaSoft (see Express 21 p30). Include a cheque for an infinite amount of money together with an infinitely large jiffy bag.

QUESTIONS

Why is it that some software houses, particularly Ocean, continually churn out games where the Amiga version is £5 dearer than the ST one? I would understand if the Amiga version merited the extra fiver, but all too often it doesn't and companies like Hewson have already proved that a good Amiga game can be priced at under £20. Ocean is an admirable software house where 8-bits are concerned, but their 16-bit versions of games sometimes leave a lot to be desired.

Why is it that your review of *FOFT* contradicted that of *ACE* (actually that could be the other way around). Now I don't know whether I should go for *FOFT* or *Elite*, both of which have only recently come out on the Amiga.

Finally, I would be grateful if you would list the basic requirements if I were to use the Amiga for MIDI. Every time someone shouts MIDI someone else shouts ST. Commodore would do well to bundle whatever it is that's required to make the Amiga MIDI compatible, if only to rival Atari.

Adrian Alam, Bearsden, Glasgow

● ***Just to repeat, we're doing an expose on games prices in the next few issues. Why shouldn't our review of FOFT contradict ACE? The games were reviewed by different people and as Clint Eastwood says in The Dead Pool (Dirty Harry V) opinions are like our souls – everybody has one.***

• Takes all sorts to make a microbiography series

THE MAGIC DRAGON

Although I agree with James Handley (*Express* 19) on the merits of the Dragon, I must take issue on two points.

The Dragon did not die out, although support from some quarters did.

The Dragon did not become extinct, but some of the software houses did.

What did happen was that unjust and distorted reports in the computer press of the time led to the premature demise of Dragon Data Ltd. Ironically those magazines who predicted no future for the Dragon have now ceased publication although the Dragon has survived with the help of User Groups, Amateur Magazines and the support of Software Houses.

For proof of the Dragon's continuing existence I suggest that james or any other interested reader contact one of the Dragon magazines who reporting increasing subscriptions, or visit one of the four Dragon shows being held this year. How many other machines have the luxury of that many shows?

Addresses for further information are:

• Paul Grade, Dragon User Group, 6 Navarind Rd, Worthing, Sussex

• Dragon Logic Magazine, 72 Diribught Rd, Inverness, IV2 3QT

• 6809 User Magazine, New Era Publications, 37 Collins Meadow, Harlow, Essex CM19 4EN

• Dragon Magazine, Dragonfire Services, 13 Parry Jones Close, Blaina, Gwent, NP3 3NH.

Alexander McIntosh, Edinburgh

● ***Thanks very much for the info – hope this brings a few old Dragons out of the closet (and a few Dragon owners too).***

+3 PD OK

May I offer advice to Ian Johnstone who was looking for PD software for the Spectrum in general, and the +3 in particular?

I suggest that you take a look at *Outlet*, a monthly disk-based magazine. In it appear frequent examples of PD software, or 'freeware' as they refer to it. Some PD software is also available from Micronet.

Whatever else, please continue to produce your excellent magazine and

giving pleasure and satisfaction and value for money.
Hugh MacGregor, Pitlochry, Perthshire

● ***What a helpful bunch you readers are! Thanks for the information, and for the leaflet you sent us on Outlet. Interested Speccy owners can order Outlet from Chezron Software, 605 Loughborough Rd, Birstall, Leicester LE4 4NJ for £3.50 disk, £5 on two microdrive cartridges or £2.75 on cassette. A trial copy of any format is available for £2, so what are you waiting for?***

Also (we see from a leaflet from Don Griffith, see these pages) Locomotive does a £30 Spectrum CP/M, enabling you to use the large quantity of CP/M software around. Details from Locomotive on 0306 740606.

ARCHIEEKY CHAPPY

Why are you so cheeky to the Archimedes? The Archie games are much better than the Amiga and ST's. When occasionally you do review Archie games you make some cheeky comments. You may pay twice as much as an Amiga or ST but you get overall ten times better a machine.

Devoted Archimedes users should know that plenty of people have written in and told you this, and you have no argument, ha!

You are also very cheeky to the people write in, e.g. last week (*Express* 23) someone wrote a very long poem, and your comment was very cheeky in reply. Do you want to go bankrupt or something? If you do you're going the right way about it!
An Archie and BBC user

● ***Cheeky chappy, that's me. There'll never be another! I like the girls who do, and I like the girls who don't. But most of all I like the girls in Teenage Queen – no, listen! Bankrupt? I went out with a girl from a bank once. She said, would you like to make a deposit... (curtain falls and Max Miller never works the Express Palladium again).***

• Ooh, we're so cheeky to the Archie

FINE WORDS BARTER NO PARSNIPS

Why don't you have a guest/ reader's reviews section as an occasional item? I don't mean for games as such, but for serious applications and suchlike which many people like myself could never afford to buy, such as *Calamus, Superbase Professional* etc. which are beyond the reach of my budget.

I have managed to get a 1040STF system with printer, plotter and monitor mainly by using a barter system, e.g. I swopped a camera for my external 1 meg drive.
C Parker, Bristol

● ***The problem with a guest reviewer's section is that the professionals want too much money and always send the review two days late, and as for readers... well, if they did it for nothing I rather suspect you 'could not guarantee quality' and the result would need 'subbing into house style'.***

Interested to hear of this barter idea. Anyone want to swop an Ascot multipoint gas water heater, vgc with original manual, for an ST?

SNIPPETS

FROM THE BEEB BANDIT

Computer viruses...
The Beeb Bandit

● ***Editor's note: This letter has had all the nonsense edited out.***

TO THE BEEB BANDIT

...I can see no sense in making something which has no constructive ability other than that of inflating the egos of pathetic morons like you... Personally I feel that you should spend more time growing up...
Simon Howard, Peacehaven, Sussex

WE'RE NOT ALL SEXISTS

Listen ladies, I have nothing against female computer users but a few of you seem to think that all male game players are spotty 14 year-olds who drool over the likes of *Teenage Queen* – that's wrong.
Adrian Alam,.Bearsden, Glasgow

● ***Absolutely. Where do they get this tired, cliched old idea that computer users are furtive self-manipulators who put sexual innuendo in everything? It's utter rubbish.***

WHINE WOMEN AND THRONG

I do wish that these people who write to your magazine would stop whining on about these soft porn games such as *Teenage Queen* etc. I would personally like to see some hard-core porno games with plenty of sado-masochism involved.
Ivor Wright-Ardon, Hampton

● ***OK, maybe some computer users are furtive self-manipulators who put sexual innuendo in everything.***

★ ★ ★ CERTIFIED DISKS ★ ★ ★

INCLUDING SLEEVES, LABELS AND
100% NO-QUIBBLE LIFETIME GUARANTEE

	25	50	100	200	500
3 1/2 DD/DS 135 TPI	£21.00	£37.00	£72.00	£135.00	£310.00
5 1/4 DD/DS 48TPI	£7.25	£13.50	£26.50	£52.00	£120.00

STORAGE BOXES

Hinged Lid & Lockable

50 x 5 1/4 ..... £5.25
50 x 3 1/2.....£5.25
100 x 5 1/4 ..... £7.25
100 x 3 1/2.....£7.25

ORDER WITH DISKS AND DEDUCT £2

PRICES INCLUDE VAT AND CARRIAGE

SAME DAY DESPATCH

WESTONING LTD
DEPT NCE, 12 SANDERSON ROAD,
WESTONING, BEDFORD MK45 5JY
TEL: (0836) 775060

We Accept EXPRESS VOUCHERS

01-574 1293

DATANIX LTD

We Accept EXPRESS VOUCHERS

SPECIAL OFFER TO ALL READERS

The New MT81 printer

Our Price £119.00 + VAT

From Mannesmann Tally the strongest printer range in the world

Mannesmann Tally leads on quality now it leads on price

Why we think you should be looking at it

★ Unbelieveable price/performance ratio
★ 130 CPS correspondence quality
★ Ease of connectivity
★ Epson FX85 and IBM proprinter compatible
★ Flexible paper handling
★ Paper parking for cut sheet feed
★ Automatic sheet feeder option
★ Input buffer 8KB

The price leader for only **£119.00 + VAT.** Use your Computer Express voucher and get **£4.00** off this purchase.
Normal R.R.P **£149.00 + VAT.**

Parallel connecting cables for Atari/Amiga/Acorn BBC/ Archimedes/IBM PC XT AT and compatibles/Apricot **£7.00 + VAT.**

Sheet Feeder	£58.00 + VAT
Ribbon Carbon M/S original	£2.95 + VAT
Fanfold Paper 11*9.5" 2000 sheets	£14.00 + VAT
Fanfold Paper A4 2000 sheets	£18.00 + VAT
A4 60 GMS single sheets 500 sheets	£5.00 + VAT

Add 15% VAT. Next Day Delivery £7.00 + VAT

DATANIX LTD, 17 REGINA ROAD, SOUTHALL MIDDX
How to order: Send cheque, PO, Access/Visa details with your vouchers.
Phone **01 574 1293** with your Access/Visa details.
Official Govt, Educ and PLC orders welcome.
Showroom open 6 days Mon to Sat 9.30am to 5pm.

VISA Access

M.A.S.T.

MEMORY AND STORAGE TECHNOLOGY (UK) LTD

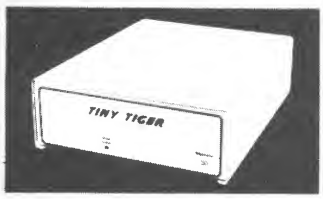
WE ACCEPT EXPRESS VOUCHERS

TECHNICAL EXCELLENCE

"The MatchBox Collection"

COMPACT LOW POWER AMIGA® COMPATIBLE PERIPHERALS ENGINEERED TO WORK TOGETHER FROM THE CREATIVE PEOPLE AT MEMORY AND STORAGE TECHNOLOGY.

TINY TIGER™ HIGH PERFORMANCE SCSI
HARD DISK SYSTEM FOR A500/1000/2000



- SMALL SIZE
- PLUGS INTO PARALLEL PORT
- TRANSPARENT PRINTER PASS THRU.
- FAST
- DRIVE TRANSFER RATES UP TO 2.5 MEG/SEC
- FREE SOFTWARE
- PASS THRU FOR 7 OTHER SCSI DEVICES

SCSI INTERFACE & SCSI DRIVE IN A SINGLE SMALL PACKAGE

THE ULTIMATE EXTERNAL FLOPPY DRIVES

UNIDRIVE™

TWINDRIVE™

- SUPER SLIM LINE
- VERY LOW POWER
- NO CLICKING
- MAY BE SWITCH DISABLED

(TWINDRIVE HAS TWO SWITCHES)

- QUALITY FUJITSU MECHANISM
- POWERED FROM AMIGA™ OR OPTIONALLY AVAILABLE PLUGPAK
- 1 YEAR LIMITED WARRANTY
- UPGRADE POLICY – BUY A UNIDRIVE AND HAVE IT FACTORY UPGRADED TO A TWINDRIVE
- REMOVABLE CABLE
- ROBUST BEIGE METAL CASING
- HINGED DUST COVER

MINIMEGS™ 500/1000 TWO MEG RAM

PHOTO OF A500 VERSION

- AUTO CONFIGURE
- LOW POWER
- 1 MEG DRAM's
- RAM TACHOMETER
- AUTOCONFIGURE LED
- VERY SMALL SIZE
- ZERO WAIT STATES
- COMPATIBLE WITH A501.

MICROMEGS™

THIS INTERNAL 512K CARD IS A DIRECT REPLACEMENT FOR THE A501. BY USING HI-TECH 1 MEG DRAMs, MICRO MEGS IS ONLY HALF THE SIZE OF THE A501 AND A FRACTION OF THE POWER CONSUMPTION. NATURALLY IT INCLUDES A BATTERY BACKED CLOCK.

ALL OF OUR PRODUCTS ARE:

- COMPATIBLE WITH EACH OTHER
- HIGH PERFORMANCE
- LOW PROFILE
- LOW POWER
- FULLY AMIGA COMPATIBLE

INTRODUCTORY OFFERS FROM M.A.S.T. (UK) LTD

UNIDRIVE — The Ultimate External 3.5" Disk Drive. Superslimline drive, low power, switch deselectable, upgradeable to a twindrive, power from the Amiga or an external plugpak and NO ANNOYING CLICK WHEN THE DISKETTE IS REMOVED FROM THE DRIVE.

Price ..... **£79.95** including a £5.00 M.A.S.T. Voucher

TWINDRIVE — All of the features of the Unidrive, but now there are TWO drives in a single box. Each one can individually switch disabled.

Price ..... **£149.95** including a £5.00 M.A.S.T. Voucher

FACTORY UPGRADE FROM SINGLE TO TWINDRIVE

Price **£69.95**

MICROMEGS — 512K/Battery Backed Clock alternative to the A501. Half the size and a fraction of the power using 1 Meg chips.

Price **£99.95**

MINIMEGS — Miniature TWO MEGABYTE external RAM module for the A500 & A1000. Zero wait states. Autoconfigure. Low Power using 1 Meg chips.

Populated to **512K** ..... **£179.95** Populated to **1MEG** ..... **£279.95** Populated to **2MEG** **£479.95**

FACTORY UPGRADE PER 512K **£99.95**

TINY TIGER HARD DISK SYSTEMS — A complete SCSI SYSTEM in a Single Small Case. Includes SCSI Interface, 3.5" SCSI Drive, Cables and Installation Disk.

TINY TIGER 30 MEG ..... **£449.95** **TINY TIGER 42 MEG** ..... **£579.95** **TINY TIGER 84 MEG** **£899.95**

★ PRODUCT SPOTLIGHT — MINIMEGS ★

MINIMEGS is a power house in a match box. Up to 2MEG of very low power CMOS memory are packed into a unit that measures only 3" x 5.25" x .625". **MINIMEGS** is external and very easy to fit. There is no need to dismantle your computer, a necessity when fitting an internal expansion memory unit. The memory chips are the latest in 'One Megabit Technology'. We chose the 256 x 4 bit configuration in a zip package. This enables the card to be populated in 512K increments, up to a total of two MEG. The board may be configured as 512K, 1 MEG or 2 MEG. The power consumption of this card is very low. The maximum is 140mA based on a duty cycle of 40%. **MINIMEGS** auto-configures — plug it in and let the computer automatically allocate its address space. **Why buy Minimegs when you already have one Megabyte of RAM?** ★ More programs require more and more memory ★ Extra memory allows the creation of large ram disks — especially useful for speeding up complicated animation routines ★ The memory inside your computer is chip ram. This means that the microprocessor cannot access it when the custom Amiga chips are using this memory. This reduces the execution speed of programs — especially those that are very graphics intense. **MINIMEGS IS 100% FAST RAM.** The 68000 can access it without interference.

SPECIAL NOTE

As the majority of M.A.S.T. (UK) Ltd's products are 'tailor made' to customers requirements it is possible that the despatch of orders may be slightly delayed. Please allow up to 21 days for delivery. In any event M.A.S.T (UK) Ltd, undertake not to process payment (except in the case of cheques over £50 in value) until the date of despatch. All our prices include VAT at the current rate. For express delivery please add £5.00 per item. Access and Visa orders welcome. Cheques should be made payable to Memory and Storage Technology (UK) Ltd. The bank card no./expiry date should be included on the reverse.

MEMORY AND STORAGE TECHNOLOGY, INC.

M.A.S.T. (UK) LTD,
Unit 1, Dippen,
Brodick, Arran,
Scotland KA27 8RN.
Ph: (077 082) 234

M.A.S.T. U.S.A.
3881-E Benatar Way
Chico, CA 95928
(916) 342-6278

M.A.S.T AUSTRALIA
178 Pacific Hwy,
St Leonards NSW 2065
Ph: (02) 436-2600
FAX: (02) 437-4919

WE ACCEPT EXPRESS VOUCHERS

ALL PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Banks for the memory

Double your computing power! Adding punch to your micro with a memory upgrade can be easy to do – and give you access to new packages and programs you couldn't otherwise run. Memory Man Jerry Glenwright shows you how...

Remember when buying a 16K RAM pack for your ZX81 meant gargantuan memory? When Commodore used an elephant in magazine advertising for the 64, to illustrate the elephantine memory capacity of the machine? Nowadays, 64k of memory is regarded as a paltry amount in computing circles, and 16K? How long did the 16K versions of Spectrums and Orics last?

The latest 16-bit machines all come with 512k as standard and even the 8 bits can muster 128K – even if they can't address all of it directly. So why should you need to expand the memory even further? What's wrong with having 64K?

Well, it's the old story of the more you have, the more you want. No sooner are machines with half a meg widely available, than software houses write packages requiring just a little bit more in order to provide that 'much-needed' extra facility.

Since the beginning of the home and small computer industry, the amount of RAM a machine had was used as a big selling point. As the computer industry matured, manufacturers looked for new ways to sell their machines. With the refining of the chip manufacturing process and the consequent higher proportion of usuable chips per batch, the price of RAM chips dropped by huge amounts. Prices dropped to an all time low 3 or 4 years ago, when it became possible to buy DRAMs at *less* than their price of manufacture, if bought in bulk.

An enormous glut of RAM chips meant that computer manufacturers could afford to include a large amount of memory with their machines and use this as a marketing ploy, but for once, the beneficiary was the end user. The price of machines fell and their 'power' increased.

Software houses began to make use of all this available RAM by writing games requiring massive amounts of RAM to store graphics, sound and text. It became possible for programs previously only available on much larger machines to be used with micros.

Desktop publishing, music packages, paint programs and machine emulation applications all need large amounts of memory to be used to their full capacity. Many programs offer different modes in which they can run depending upon the amount of RAM your machine is equipped with. Indeed, many of the new applications won't run at all unless you have a machine with expanded memory.

Consequently, if you have a machine with a small memory, then you need some kind of RAM expansion before you can take advantage of all this new software. There are a lot of suppliers who have recognised a niche in the market and are selling RAM upgrades, and the chances are good that there is one available for your machine.

Upgrades come in several guises. Some are just

Amiga

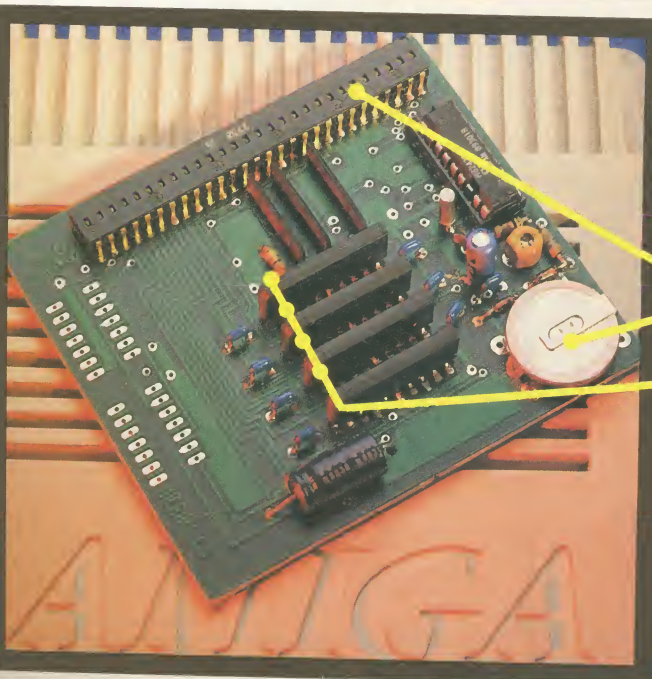
The Amiga is particularly well covered by RAM upgrades, and you'll need one if you're going to make use of some of the excellent paint and graphics packages which are being released for the machine – also, several games available in other formats in half a meg will only work with Amy if it is expanded to 1Mb. Among them is *Dungeon Master*, the best-selling game on the ST. Try

M.A.S.T. (Memory And Storage Technology UK ITD), Unit 1, Dippen, Brodick, Arran, Scotland KA27 8RN. Tel. 077 082 234. M.A.S.T. supply several memory upgrades in its 'Matchbox Collection', which are excellent quality, small, very easy to fit and *cheap*. We used the MicroMegs product in these 'how to do it' photographs. The product is very well made, has a real-time clock as standard, and – as you can see – is very easy to install.

Ashcom, 10 The Green, Asby-De-La-Zouch, Leicestershire LE6 5JU. Tel. 0530 411485.

The Amy is just *made* for upgrades. You simply remove a panel on the back of the machine using a flat blade screwdriver, plug in the memory board and snap the panel back into place. Some programs that need the extra memory, or work much better with it, are:

- Dungeon Master
- K-Data
- Logistix integrated package
- Digiview 2.0



Amiga

- The 'Micromegs' RAM expansion shown component side up
- Connector
- Battery for real time clock
- RAM chips
- Cover can be removed with a flat blade screwdriver
- Connector for user upgrades

• After turning the Amiga upside down, removal of the expansion port cover is easy, and provides access to the necessary connector

a box of chips and capacitors and you're expected to identify the area of installation and wield a soldering iron in order to upgrade your machine.

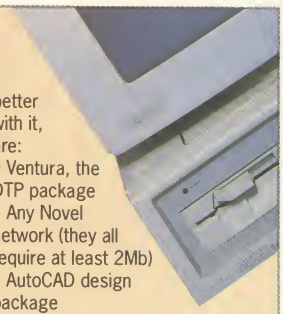
Others are housed in a plastic box with a connector to facilitate attachment to the computer, making the whole process of installation very easy. Almost all expansions come with extensive and clear instructions and with a few simple tools and a little application it will be easy. To carry out most upgrades you will need cross head and flat head screwdrivers and a soldering iron.

You must be aware though, that in almost all cases you will invalidate the machine's guarantee by opening the case, although if you've owned it for more than a year then the guarantee will probably have expired anyway.

The actual operation will probably involve you opening the case of your machine, locating the position for the new chips, determining the correct orientation, then installing them on the board either by insertion in existing sockets, or soldering new sockets in purpose made holes, and then inserting the chips. Once the upgrade is installed in your machine, you will be able to take advantage of lots of new software.

How about attempting some real-time animation? With a megabyte of memory it's possible to animate lots of frames. Want to publish a newsletter? A memory upgrade will make it much easy, by allowing you to store more of the document in memory at one time and by limiting the amount of disk swaps needed. Music packages and games too will all benefit from the extra memory. ●

PC



Although the PC-DOS can only address 640K directly, many applications make use of extended memory by bank switching RAM. Spreadsheets and databases are particularly suited to large memories and almost all of the latest applications have the facility to make use of extended RAM. Try: **RSC Limited, 75 Queens Road, Watford WD1 2QN. Tel. 0923 243301**

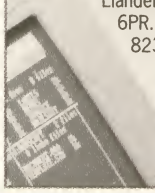
CYCA Limited, 287 Caledonian Road, London N1 1EG. Tel. 01 700 4004

Upgrading the memory of a PC is very easy – the machine is designed to be opened and upgraded. Simply undo a few screws, lift off the casing, plug in the board containing the chips and close the machine up.

Some programs that need the extra memory, or work much better with it, are:

- Ventura, the DTP package
- Any Novel network (they all require at least 2Mb)
- AutoCAD design package
- Windows, graphical front end for PCs

PCW



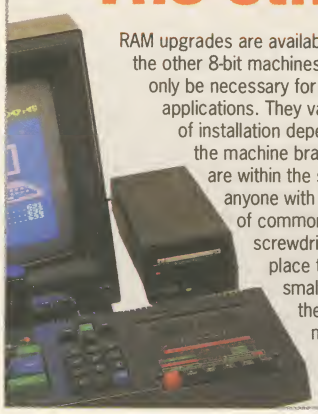
If you have an 8256 and want to upgrade to 512K of memory (same as an 8512 or 9512) try West of Britain Business Services, department 8/4, Capel Tobi, Ffairfach, Llandeilo, Dyfed SA19 6PR. Tel. 0558 823782

Silicon City, department 8, Wheal Rose, Redruth, Cornwall TR16 5DR. Tel. 0209 891141

Carrying out the memory upgrade of a PCW is relatively straightforward. After undoing the six screws holding the monitor case together, you disconnect the power and disk drive cables and the main board can be slid out of the case. It's then a simple matter of inserting the chips, flicking a dipswitch or two and putting the whole thing back together.

A RAM upgrade will have an immediate effect on all your applications, but especially within *LocoScript* – your RAM disk (M:) will leap from 102K to a massive 358K allowing you to store many more documents on the M: drive at once. Essential if you want to make best use of the *LocoScript* add-ons such as *LocoSpell*, the printer fonts, printer drivers, the database *LocoFile* and so on – maker Locomotive now recommends that all 8256 owners do the upgrade.

The others



RAM upgrades are available for most of the other 8-bit machines, but they'll only be necessary for very specialist applications. They vary in difficulty of installation depending upon the machine brand, but most are within the scope of anyone with a modicum of common sense and a screwdriver. The best place to look is in the small ads of the computer magazines (i.e. *Express*!).

ST

Almost all 'serious' applications and lots of games will be improved by expanding the memory of your ST from 512K to 1024K – if you can find a supplier, that is. Although there are a lot of people who would like to sell you a memory expansion, RAM prices being what they are, RAM upgrades are pretty thin on the ground at the moment. Try:

Ladbroke Computing International, 33 Ormskirk Road, Preston, Lancashire PR1 2QP. Tel. 0772 203166

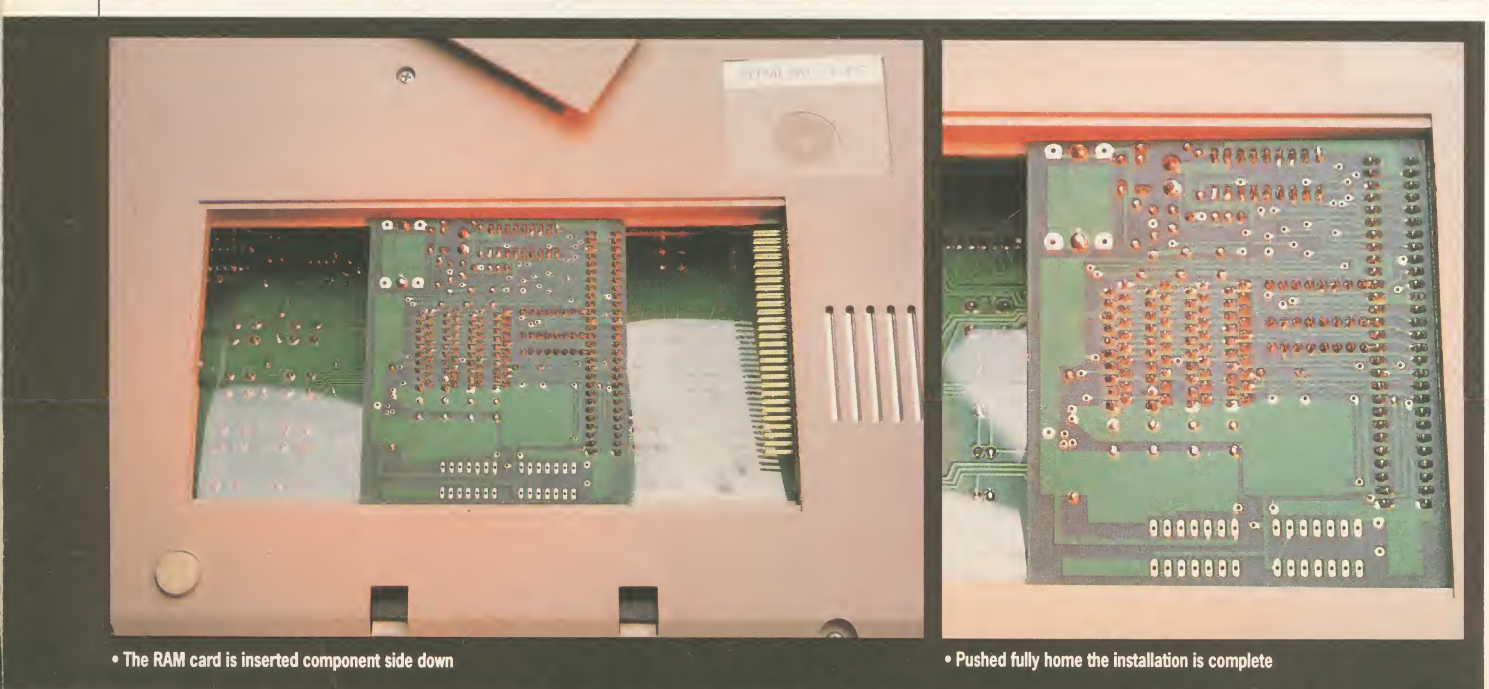
Datel Electronics LTD, Fenton Industrial Estate, Govan Road, Fenton, Stoke-on-trent. Tel. 0782 744707

Upgrading the Atari machine varies in difficulty. With the STFM, it's a relatively simple matter of opening the case and inserting the chips.

With STM things are very different. You have to solder sockets onto the main board before you can insert the chips, although there are several dealers who would be willing to carry out the upgrade on your behalf.

Extra storage capacity will allow you take advantage of some excellent animation and music packages, increase the scope of many games, and improve DTP by leaps and bounds. Some programs that need the extra memory, or work much better with it, are:

- K-Roget, Kuma's thesaurus
- Fleet Street Publisher
- VIP, Lotus 1-2-3 clone
- SuperBase Professional database



• The RAM card is inserted component side down

• Pushed fully home the installation is complete

520ST-FM SUPER PACK

1Mb DISK DRIVE
£450 OF SOFTWARE

ARCADE GAMES

Arkanoid II	Imagine	£19.95
Beyond The Ice Palace	Elite	£19.95
Black Lamp	Firebird	£19.95
Buggy Boy	Elite	£19.95
Chopper X	Mastertronic	£9.99
Ikari Warriors	Elite	£14.95
Marble Madness	Electronic Arts	£24.95
Quadralien	Logotron	£19.95
Ranarama	Hewson Consultants	£19.95
Return To Genesis	Firebird	£19.95
Roadwars	Melbourne House	£19.95
Starquake	Mandarin	£19.95
Test Drive	Electronic Arts	£24.95
Thrust	Firebird	£9.95
Thundercats	Elite	£19.95
Wizball	Ocean	£19.95
Xenon	Melbourne House	£19.95
Zynaps	Hewson Consultants	£19.99

SPORTS SIMULATIONS

Eddie Edwards Super Ski	Elite	£19.95
Seconds Out	Tynesoft	£19.95
Summer Olymplad '88	Tynesoft	£19.95

PRODUCTIVITY SOFTWARE

Organiser	Triangle Publishing	£49.95

JOYSTICK

Atari CX40 Joystick	Atari Corp	£4.99

FREE ATARI BUNDLE VALUE: £458.97

The Atari Super Pack is ideal for you if you want to get off to a flying start with the best in entertainment software. The Pack includes a 520ST-FM with ½Mb RAM, a built-in 1Mb disk drive, over £450 of top games and a joystick. If you buy the Super Pack at Silica Shop, we will add our own ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for details.

£399 INCLUDING VAT

With SM124 mono monitor: £498 INC VAT — With SC1224 colour monitor: £698 INC VAT

1040ST-FM PROFESSIONAL PACK

NOW WITH TV MODULATOR

For the serious home user and the small business, we are pleased to announce a new package based around the 1040ST-FM. The 1040ST-FM has 1Mbyte RAM and a 1Mbyte built-in disk drive. In addition, the 1040ST-FM now comes with a TV modulator built-in. (The previously available 1040ST-F was designed for use with a monitor only and did not come with a modulator.) This modulator allows the 1040ST-F to be plugged directly into any domestic TV set, and comes complete with a lead to allow you to do so. The new 'Professional Pack' from Silica includes the new 1040ST-FM with modulator plus four high quality software packages including a spreadsheet, database, word processor and programming language. This 'Professional Pack' software will enable you to get straight down to business with your new computer. In addition to this software (worth £384.84), if you buy the Professional Pack from Silica Shop, you will also receive the Silica ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for further information.

£499 INCLUDING VAT

With SM124 mono monitor: ..... £598 INC VAT
With SC1224 colour monitor: ... £798 INC VAT

ATARI 1040ST-FM	(Computer)	£499.99
VIP PROFESSIONAL	(Spreadsheet)	£149.95
MICROSOFT WRITE	(Word Processor)	£149.95
SUPERBASE PERSONAL	(Database)	£59.95
BASIC DISK & MANUAL	(Language)	£24.98

NORMAL RRP: £884.82
LESS DISCOUNT: -£385.82
PROFESSIONAL PACK PRICE: £499.00

2Mb & 4Mb MEGA ST

The MEGA ST computers are styled as as lightweight keyboard with a separate CPU, connected by a coiled telephone style cable. There are two versions of the MEGA ST, one with 2Mbytes of RAM and the other with 4Mbytes. Each version has a 1Mbyte double sided disk drive built-in to the CPU unit. The MEGA ST's do not come with modulator built-in and must therefore be used with a monitor. With every MEGA ST purchased, we will add the 'Professional Pack' software (worth £384.83) detailed above, plus the Silica ST Starter Kit (worth over £200) both Free Of Charge. Return the coupon for further details.

2Mb MEGA ST
£899 INC VAT
+mono monitor = £998
+colour monitor = £1198

4Mb MEGA ST
£1199 INC VAT
+mono monitor = £1298
+colour monitor = £1498

DTP PageStream £149 +VAT =£171.35

Desktop Publishing (DTP) is one of the fastest growing applications for personal computers. We are pleased to announce a powerful low cost package for the Atari ST called PageStream. PageStream costs only £149 (+VAT=£171.35) and, because it works with an Atari 1040ST and a Seikosha SP-180AI printer, you can be up and running with a complete system for less than £1000. Some of the features of PageStream are listed to the right. If you would like further information on this program, complete and return the coupon below, ticking the 'DTP' box in the corner.

* TEXT-FLOW AROUND GRAPHICS
* ROTATION OF TEXT & GRAPHICS
* SLANT OR TWIST ANY OBJECT
* POSTSCRIPT COMPATIBLE
* TAG FUNCTION
* AUTO/MANUAL KERNING & HYPHENATION
* GROUPING OF OBJECTS

DO YOU OWN AN ATARI ST?

If you already own an Atari ST computer and would like to be registered on our mailing list as an ST user, let us know. We will be pleased to send you copies of our price lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Sidcup branch and begin experiencing a specialist ST service that is second to none.

SILICA SHOP:

SIDCUP (& Mail Order) **01-309 1111**
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX
OPEN: MON-SAT 9am - 5.30pm LATE NIGHT: FRIDAY 9am - 7pm

LONDON **01-580 4000**
52 Tottenham Court Road, London, W1P 0BA
OPEN: MON-SAT 9.30am - 6.00pm LATE NIGHT: NONE

LONDON ..... **01-629 1234 ext 3914**
Selfridges (1st floor), Oxford Street, London, W1A 1AB
OPEN: MON-SAT 9am - 6.00pm LATE NIGHT: THURSDAY 9am - 8pm

ATARI ST

ST COMPUTERS

The range of Atari ST computers offers something for everyone. From the games enthusiast who wants the challenge of the very best in arcade action, to the businessman who wants to make financial forecasts or faultless presentations. The ST offers high quality graphics, sound and speed for the gamer, whilst providing a fast, user friendly and affordable solution to business. The ST is now firmly established in the home environment and boasts a wealth of users in education, local government, television, and a variety of different businesses. Software for the range stretches to cover applications as diverse as ENTERTAINMENT, ACCOUNTS, ART, COMMUNICATIONS, COMPUTER AIDED DESIGN, DATABASES, DESKTOP PUBLISHING, EDUCATION, MUSIC, PROGRAMMING, SPREADSHEETS, WORD PROCESSING and more. For a full list of the software available, as well as details of the ST range, complete and return the coupon below.

All prices correct at the time of going to press. E&OE.

520ST-FM EXPLORER PACK
WITH BUILT-IN 1Mb DISK DRIVE

The value for money offered by the Atari ST range is reflected in the Explorer Pack featuring the 520ST-FM computer with 512K RAM. The 520ST-FM computer now comes with a built-in 1 Mb double sided disk drive as well as a free mouse controller and a built-in TV modulator. The new 520ST-FM Explorer Pack includes the 520ST-FM computer, the arcade game Ranarama, a tutorial program and some useful desktop accessories. In addition, if you buy the Explorer Pack from Silica, we will give you the Silica ST Starter Kit worth over £200, FREE OF CHARGE. Return the coupon for details of our Starter Kit and of the full ST range.

£260

ONLY **£2.51** PER WEEK
RETURN COUPON FOR DETAILS

+VAT= **£299**

+ SM124 mono monitor: £398 INC VAT — + SC1224 colour monitor: £598 INC VAT

WHY SILICA SHOP?

Before you decide when to buy your new Atari ST computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer and expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Atari ST related products in the UK, a full time Atari ST specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years with an annual turnover in excess of £8 million and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. But don't just take our word for it. Complete and return the coupon below for our latest literature and begin to experience the Silica Shop specialist Atari service.

SILICA STARTER KIT: Worth over £200, FREE with every Atari ST computer bought from Silica.
PROFESSIONAL PACK: Free business software with 1040ST-FM and MEGA ST's bought from Silica.
DEDICATED SERVICING: 7 full-time Atari trained staff with years of experience on Atari servicing.
THE FULL STOCK RANGE: All of your Atari requirements from one place.
AFTER SALES SUPPORT: The staff at Silica are dedicated to help you get the best from your ST.
FREE CATALOGUES: Mailed direct to your home as soon as we print them, featuring offers as well as all of the new releases.
FREE OVERNIGHT DELIVERY: On all hardware orders shipped within the UK mainland.
PRICE MATCH PROMISE: We will match competitors on a 'same product same price' basis.
FREE TECHNICAL HELPLINE: Full time team of Atari technical experts always at your service.

FREE SILICA STARTER KIT WORTH OVER £200

WITH EVERY ST - RETURN COUPON FOR DETAILS
ALL PRICES QUOTED INCLUDE FREE UK DELIVERY

To: Silica Shop Ltd, Dept NCE 0489 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

PLEASE SEND FREE LITERATURE ON THE ATARI ST

Mr/Mrs/Ms: ..... Initials: ..... Surname: .....

Address: .....

.....

.....

Postcode: .....

Do you already own a computer
If so, which one do you own? ..... DTP ☐

TRACK COMPUTER SYSTEMS

Track Specialise In Hard Drives, Floppy Disks, Serious Software And The Highest Degree Of Customer Care. Call Us For Service Beyond The Sale

TRACK LEADS THE MARKET IN FLOPPY DISKS
CHECK OUT THESE AMAZING PRICES
QUALITY DISKS CAN'T BE FOUND CHEAPER

	25+	50+	75+	100+
3.5" Double Sided Density 135tpi	79p	78p	76p	75p

ALL DISKS ARE CERTIFIED 100% ERROR FREE

Amdrive A500 30 MByte SCSI Hard Disk.

Amdrive is an affordable, reliable and desirable necessity for all Amiga 500 owners. The Amdrive is styled to match your Amiga, it combines mass storage, speed, power and a low price in one attractive unit. Because of its amazing 38 m/s access time it can load DPaint II in under TWO seconds. The Amdrive is available NOW and comes complete with a replacement guarantee for 1 year, extendable to 2 years.

TRACK PRICE £399 Fully Inclusive Of VAT

ATARI HARD DRIVES

22 MByte (Formatted).....£399
32 MByte (Formatted).....£439
65 MByte (Formatted).....£549
130 MByte (Formatted).....£799

OTHER AMIGA DRIVES

20 MByte (Formatted).....£550
60 MByte (Formatted.....£699

miniGEN AMIGA GENLOCK £113.85

TRACK BEST FOR BOOKS. If you require any book currently on the market, call TRACK for best service.
TRACK also supply DIY Kits (everything to build your own drive) Call us for Prices. Any Hard Disk Available Call Track. We Can Supply It
TRACK BEST FOR: Wordprocessing, Databases, Spreadsheets, Desk Top Publishing, Utilities, Languages, Cad, Paint Packages, Animation and Communications.

There are far too many applications to mention here. Please call Track for our brochure by return of post guaranteed.

COMPUNET MEMBERSHIP SPECIAL OFFER FROM £32.00

We Also Offer The Release Schedule The Latest Information On Software Release Dates For Every Make Of Computer Updated Weekly
Remember Track Put The Customer First Whatever You Require For The Amiga Or Atari We Are Only A Phone Call Away
We Even Hold Our Lines Open Until 9pm During The Week.

We Accept EXPRESS VOUCHERS

HOW TO ORDER TRACK PRODUCTS

Make Cheques, Postal Orders, Bankers drafts payable to Track Computer Systems.
If you require to pay by Bank Giro Transfer at your own bank, please phone for details.
All prices fully inclusive of postage and packing. We also offer Credit. Please phone for details.
All our products are covered by a 12 Month Warranty and are fully tested prior to despatch
Free Delivery to UK mainland. Orders despatched on clearance of cheque. For Courier Service add £7.50 per major item.

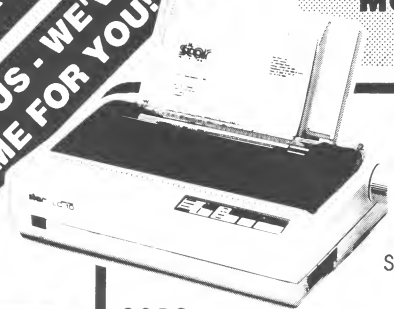
We Accept EXPRESS VOUCHERS

PHONE TRACK ON 0773 531991 24 HOURS MANNED UNTIL 9PM DURING THE WEEK. FAX TRACK ON 0773 765721

Compunet ID SS21
Track Are Recommended Compunet Distributors
Track Computer Systems, Systems House, Braemar Avenue, Eastwood, Nottingham NG16 3JY

IT'S WICKED! TALK TO US - WE'VE GOT TIME FOR YOU!

MORE SOFTWARE THAN YOU CAN HANDLE!
MORE HARDWARE THAN YOU CAN USE!



STAR LC10

PRINTER + **FREE** CABLE
Commodore Serial/ Centronics Interface
PLUS FREE Integrated Software Package.Word Processor - Database - Comms (worth £34.95)

£219 inc VAT & carr.
LC10 **COLOUR ONLY £279.99** inc. SOFTWARE

WE STOCK SOFTWARE FOR ATARI 65XE/C16 MSX ELECTRON/BBC + SEGA & ATARI 2600 GAMES CONSOLES

C64 TAPE DECK **£29.95**
POWER SUPPLY **£24.95**
ACTION REPLAY Mk 5 PROFESSIONAL.....**£34.95**

OCEANIC OC118N DISK DRIVE

Commodore 64 Compatible.
PLUS Superb Adventure Software Bundle - DRAGON WORLD - SPIRIT OF THE STONE - ZORK II
(limited stock, titles may vary)
ONLY £129.99 inc carriage

JOIN OUR SOFTWARE CLUB:
GENEROUS DISCOUNTS TO ALL CLUB MEMBERS. VISIT YOUR NEAREST STORE FOR DETAILS.

VISIT US SOON. YOU WILL LIKE WHAT YOU SEE.
Unable to visit? Never mind. Our Mail Order Service will see you right.

MAIL ORDER:
Ring our Stoke-on-Trent store to place your order. We accept Access & Visa (we might even take cash or a cheque). Craig will despatch your order speedily & safely. Same day despatch on all stock items.

YOUR ONE STOP SHOP

FOR A COMPLETE RANGE OF SOFTWARE - HARDWARE - PERIPHERALS - 2nd DISK DRIVES - RAM UPGRADES - MONITORS - PRINTERS - DISKS - DISK BOXES - JOYSTICKS - MOUSE MATS & A WHOLE LOT MORE!
AMIGA + FREE SOFTWARE PACK - MORE THAN 5 DIFFERENT PACKS TO CHOOSE FROM.
ATARI ST 520 & 1040 - AGAIN MANY SYSTEMS TO CHOOSE FROM & ALL WITH GREAT **FREE** SOFTWARE BUNDLED WITH THEM. PRICES ARE CHANGING ALL THE TIME - RING FOR LATEST DEALS.

SEND LARGE S.A.E. FOR FREE 20pg CATALOGUE

SHEFFIELD
6Waingate
Sheffield
Manager: Andy
Tel: 0742 721906
Closed Thursday

STOKE-ON-TRENT
11 Market Square
Arcade, Hanley
Stoke-on-Trent
Manager: Dave
Tel: 0782 268620
Open 6 Days

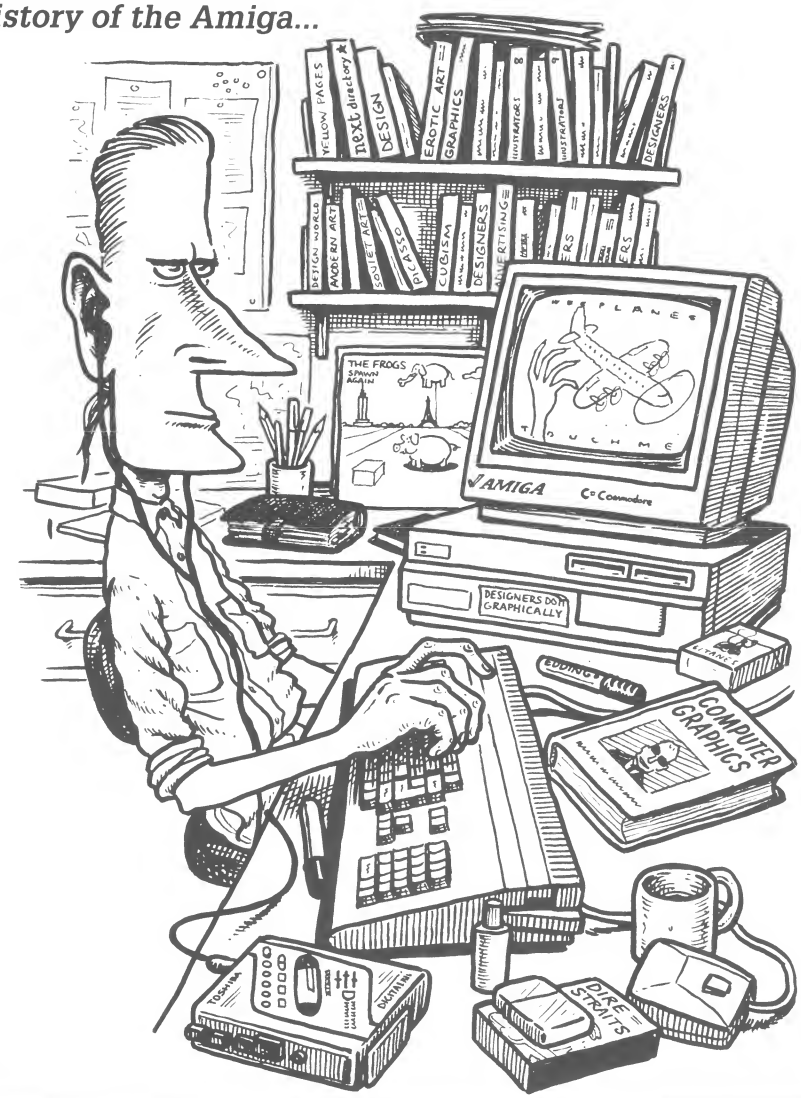
Software SUPERSTORE

STOCKPORT
6 Mealhouse Brow
(Off Little Underbank)
Stockport
Manager: Wayne
Tel: 061 480 2693
Closed Thursday

ST HELENS
27 Baldwin Street
St Helens
Manager: Adrian
Tel: 0744 27941
Closed Thursday

The blitter story

Originally designed as the ultimate games machine, the Amiga was first sold as an over-priced business micro . Fortunately the price eventually dropped, and ordinary home users had the chance to sample the Amiga's superlative audio-visuals at first hand. In the last of the Micro Biographies, Rik Haynes recounts the turbulent history of the Amiga...



The Amiga first saw the light of day as a way – for some American venture capital doctors – to make some cash from the computer games boom of the early- to mid-80's. Collecting together a team of talented software and hardware designers, they formed Amiga Computer, Inc and set up base in California, USA.

Their original intention was to produce the ultimate games machine, capable of producing coin-op quality audio-visuals. After months of creative and innovative design they achieved just that, thanks to the talents of Jay Miner. A chip designing genius responsible for the custom chips on the Atari 8-bit computers – in fact, in many ways the Amiga's graphics and sound chips are 16-bit super enhanced versions of the underrated Atari micro innerworkings.

Unfortunately by the time they had a system ready to show to the world, the games console boom had disappeared – to be replaced by micros. It was lucky then, that the creators of the Amiga had taken its original specification to the nth degree, producing not only state-of-the-art audio-visual hardware but also beginning development on a complex operating system environment and all the extra trimmings that a micro requires (keyboard, disk drive, expansion slots, etc). The ultimate games machine had become the ultimate micro.

It's show time

By the middle of 1984, Amiga Computer, Inc had finally reached the stage where it could show off its new baby to the world – albeit in early prototype (hardwired) form. And so the Amiga Lorraine was first shown to a select few at the Chicago Consumer Electronics Show (CES) in June. A select few this may have been, but did the news spread fast! Overnight, micro users across the world were drooling at the prospect of owning this state of the art micro.

Unfortunately by this time, the costs of developing the machine, were becoming too great for the docs, so they finally decided to opt out of the computer industry altogether. So in-stepped former Commodore guru, Jack Tramiel, who had just bought Atari and was just looking for a machine to beat his old companies run away success, the C64. Weeks of heavy negotiation followed, but still no deal had been struck. Until Commodore suddenly popped up with an acceptable offer – and Amiga Computer, Inc was bought up in August 84. Lorraine was dropped, Amiga stayed though.

The Commodore Connection

Obviously, Jack Tramiel was annoyed, and legal wranglings between Atari and Commodore took place. But Atari finally went off and brought out the Amiga's arch rival, the ST. Meanwhile, things at Commodore weren't so hot either. After a string of disastrous financial results, it required a replacement for the C64 urgently. This was the start of many a wrong move made by Commodore in its handling of the Amiga.

First off, they scrapped development on the Amiga's operating system (OS), and got an off-the-shelf OS and mixed the two together. This OS was incomplete and totally bug-ridden – today the Amiga is still prone to OS crashing and bugs, even with countless upgrades and new versions of its OS. Secondly, and probably more important,

Make a date with Commodore

1977 • PET launched at Chicago Consumer Electronics Show in June.
1981 • VIC-20 launched at Las Vegas CES in January.
1982 • C64 launched at Las Vegas CES in January.
1984 • C16 and Plus/4 launched at Las Vegas CES in January.
1984 • Amiga Computer, Inc demonstrated Amiga Lorraine to a select few at Chicago CES in June.
1984 • Commodore purchased Amiga Computer, Inc in August.
1985 • C128 launched at Las Vegas CES in January.
1985 • Pre-production Amiga A1000 previewed to invited guests only at London PCW Show in September.
1986 • Amiga A1000 UK public debut at Birmingham Which Computer? Show in January.
1987 • Amiga A500 and Amiga A2000 launched at Hanover CeBit Computer Fair in May.

Too trivial to mention

With its high public profile the Amiga has attracted so much publicity that it's hard to find any new snippets of trivia. Of course, we could mention the fact that Amiga's are used in the production of TV shows like *The Chart Show* and *Network 7*, the Amiga has possibly the largest collection of viruses on any micro, Amigas were used at the Bros concerts last year, zzz...zzz...zzz... See what we mean!

Get your tech specs here...

Amiga A500 • Motorola 68000 microprocessor running at 7.14 MHz • 512K RAM • 256K ROM • RAM Internally expandable to 1Mb, externally expandable to 9Mb • Built-in 3.5" disk drive (880K formatted) • Custom designed DMA (25 channel) audio-visual-controller chips (Agnus, Denise and Paula), graphic co-processor (Copper) and Blitter (high-speed data transfer) • Text 80x25, 60x25 • Resolution 320x256, 320x512, 640x256, 640x512 • Colour 320 pixels (32 colours) and 640 pixels (16 colours) from a palette of 4096 • Special HAM (Hold and modify) mode produces 4096 colours on-screen display • Hardware assisted facilities for sprites, scrolling and animation • 4 sound channels connected to right and left audio (Stereo) with 9 octave, complex waveform generation, amplitude and frequency modulation, and efficient sampled sound handling • Full size high quality typewriter style keyboard with separate cursor key cluster, numeric keypad and function keys • Mouse • Interfaces serial (RS232), parallel (Centronics), RGB (analogue, digital), video (monochrome), expansion port (free processor bus for extra memory, hard disk, co-processors), external disk drive port, genlock capability (mix video and Amiga images), right and left audio out, 2 Atari-style game controller ports

Hard and Soft Options

8 hardware and software best buys for the Amiga

DeluxePaint III I Paint and Animation package • £79.99 • Published by Electronic Arts on 0753 46465

DeluxePaint III (reviewed *Express* 20) is the latest version of the most popular Amiga paint package around. Requiring at least 1Mb of RAM, *DeluxePaint III* includes an impressive paint and animation capability, which is both easy to use and extremely powerful.

✪ ✪ ✪ ✪ ✪

MiniGEN • Genlock device • £99 (ex VAT) • Manufactured by Applied Systems and Peripherals (ASAP) on 0724 280222

MiniGEN (reviewed *Express* 15) is one of the cheapest genlock devices available on the Amiga and its display quality – depending on the type of video equipment used – can be impressive.

✪ ✪ ✪ ✪

Digi-View Gold • Video Digitiser • £129.95 • Manufactured by NewTek, USA • Available from Amiga Centre Scotland on 031 5574242 or HB Marketing on 0895 444433

Digi-View Gold (*Express* 17) is the latest version of probably the most popular video digitiser available on the Amiga.

✪ ✪ ✪ ✪

Devpac 2 • Assembler/Debugging system • £59.95 • Published by Hisoft on 0525 718181

Devpac 2 (reviewed *Express* 1) is an almost essential purchase if you want to program the Amiga using assembly language.

✪ ✪ ✪ ✪ ✪

Amiga Hardware Reference Manual • £23.70 • Published by Addison Wesley • Available from SDL on 01 309 0300

THE READ for any serious Amiga programmer, giving full details of the Amiga's audio-visual custom designed chips.

✪ ✪ ✪ ✪ ✪

Protext • Word-processor • £99.95 • Published by Arnor on 0733 239011

Protext (reviewed *Express* 4) is a fast and flexible word processor.

✪ ✪ ✪ ✪

Denaris • Game • £19.99 • Published by Rainbow Arts/US Gold on 021 356 3388

Denaris (reviewed *Express* 16) is a superb horizontally-scrolling shoot-'em-up with excellent coin-op quality audio-visuals and gameplay.

✪ ✪ ✪ ✪ ✪

Populous • Game • £24.99 • Published by Electronic Arts on 0753 46465

Populous (reviewed *Express* 22) is a highly original and totally addictive game which is destined to become a classic.

✪ ✪ ✪ ✪ ✪

Commodore shifted the Amiga's emphasis completely away from the home user and onto the more lucrative (according to Commodore bigwigs) business side. So when the Amiga was finally launched in the States in 1985, only the most dedicated and affluent home user could afford the Amiga's extortionate asking price – power with the price.

Thanks to its high specification, the Amiga still managed good sales with it quickly achieving worldwide cult status. Commodore began work on a new version of the Amiga, upgrading its specification and moving further up the business ladder. This is where the old development team of the Amiga finally dispersed, and the new Amiga was born at Commodore's own plant at Braunschweig, West Germany.

Get the balance right (finally!)

After making a botched effort with the Amiga's user direction – allowing Atari to milk the home market with its popular ST in some countries – Commodore finally saw the light in early 1987 when it not only launched the up-market Amiga A2000 but also an affordable "520STFM beater" version, the Amiga A500. Finally, the home user could afford the power of the Amiga.

Sure, the Amiga still struggles against the tough competition of the ST, but with its superior specifications, worldwide support by software and hardware developers, and loyal user following – the Amiga is fast increasing its lead in the race. After all, as the computer industry currently stands, there's no other home micro to match the Amiga's balance between hardware capabilities and range of software... ●

Athene Consultants (Media Centre)
16 Stoke Road, Gosport, Hants. PO12 1JB
Tel: 0705 511439 (Office Hours)
0705 511648 (24 Hours) Fax: 0705 511646

*** Same Day Despatch* Stock items**
*** CREDIT CARDS WELCOME***
*** Access & Visa***
All Orders £1 Delivery Charge. All Prices Include VAT.
Courier Next Day Delivery £5.75

We Accept EXPRESS VOUCHERS

WE WILL MATCH OR BEAT ANY OTHER PRICE, CALL OR WRITE FOR DETAILS
THE LOWEST PRICES IN THE UK GUARANTEED. CALL FOR QUANTITY DISCOUNTS

3.5" DS/DD 135TPI
High Quality Bulk
High Clip (KAO/Maxell)
Lifetime Warranty, **recommended for Amigas**
97p
Also Standard Bulk at
86p

5.25" DS/DD 48tpi
High Quality Bulk
High Clip
Lifetime Warranty
For IBM PC 360k
37p
Minimum Qty 25
Order in Units of 25

5.25" DS/QD 96tpi
High Quality Bulk
High Clip
Lifetime Warranty
45p
Minimum Qty 25
Order in Units of 25

5.25" HD AT 96tpi
High Quality Bulk
High Clip
Lifetime Warranty
For IBM AT 1.2 Mb
£1.13 Inclusive
Minimum Qty 25
Order in Units of 25

SPECIAL OFFER * * * *
5.25" DS/HD Branded Verbatim only £16.00 while stocks last
3.5" ``DS/DD Branded Verbatim only £13.00 while stocks last
Amiga 500 Systems from £379

STAR COMPUTER PRINTERS
Registered Dealer, Official UK versions only

LC10	£199.00 (inclusive)
LC10 Colour	£259.00 (inclusive)
LC 24/10	£310.00 (inclusive)
NB 24/10	£425.00 (inclusive)
Star NX15	£320.00 (inclusive)
Star NB 24/15	£510.00 (inclusive)
Star LP8 Laser Only	£1600.00 (inclusive)
Panasonic Laser	£1840.00 (inclusive)
Citizen 120D (Commodore)	£139.00 (inclusive)

Price includes delivery & VAT

AMIGA HARDWARE

AMIGA A500	£389.00 (inclusive) + FREE Software
AMIGA A500 1MEG	£528.00 (inclusive) + FREE Dragon's Lair
1084 S Stereo Monitor	£279.00 (inclusive)

A2000 MACHINES, PLEASE CALL FOR PRICING

"APD Unlimited! Now part of Athene PD. Full Range of Amiga PD from £2.50 a disk Special Offer: Starter Collection of 4 PD Demo disks. Latest releases £6.50 inclusive. Ever growing library, please send S.A.E. for Catalogue

We also Supply Verbatim, Fuji, Xidex, Maxell, Nashua

The Full STAR Printer Range at Low Prices

PC HARDWARE
AMSTRAD
EFI
SAMSUNG
OPUS
PLEASE CALL FOR THE BEST QUOTES

SCHNEIDER EURO PC
Complete Mono System Now Available
£389.00
+ VAT

AMSTRAD COMPUTERS

PC1512 SD Mono.....£485
PC1512 DD Mono.....£570
PC1512 SD Colour.....£570
PC1512 DD Colour.....£665
PC 1512 range include DMP 3160 Printer. Operating System. Migent Ability and Four US Gold Games.

AMSTRAD PC1640

PC1640 SD Mono.....£485
PC1640 DD Mono.....£555
PC1640 SD Colour.....£555
PC1640 DD Colour.....£650
PC1640 SD ECD.....£650
PC1640 DD ECD.....£735

AMSTRAD PC2086

New Bundled Package includes choice of printer and Lotus Symphony
Call for details

AMSTRAD PORTABLES

PPC512S Single Drive.....£385
PPC512D Double Drive.....£475
PPC640S SD with modem.....£459
PPC640D DD with modem.....£575

EPSON COMPUTERS

PC Portable T/Floppy.....£935
PC Portable 20 meg H/D.....£1495
PCE Single Floppy.....£595
PCE 20 meg Mono Mon.....£895
PCAX 20 meg.....£1198
PCAX 40 meg.....£1495
PCAX 80 meg.....£1895

COMPAQ OPUS TOSHIBA

Full range available call for details

PC ADD-ONS

DRam Chips Tapestreamers Maths Co. Processors Hard Cards.....Call

FACSIMILES

JT Fax Card.....£299
Telecom CF9.....£895
Canon F110.....£995
Canon 230.....*Call*
Ricoh 10.....£1150
Richoh 20.....£1525
Panafax UF150.....£995

SCANNERS

AMS 300 Hand Held 100-400 DPI.....£195
Canon IX-12F Flat Bed 75-300 DPI.....£895
Panasonic FX-RS505 inc OF OCR Software and Interface 400 DPI.....£995

INKJET PRINTERS

Epson SQ 2500.....£975
HP Thinkjet.....£315
HP Quietjet.....£355
HP Quietjet Plus.....£425
HP Deskjet.....£685
HP Paintjet.....£850
HP Ruggedwriter.....Call

PLOTTERS

HP7440 (A4) 8 Pen.....£715
HP7475 (A4/A3) 6 Pen.....£1095
Hitachi 673 BM.....£825
Roland DXY 880A A3.....£565
Roland DXY 1100 A3.....£635
Roland DXY 1200 A3.....£885
Roland DXY 1300.....£1035

PLOTTER ACCESSORIES

Pens Paper etc.....Call

LASER PRINTERS

Canon Series II.....£1575
Canon Series II T/B.....Call
Brother HL-8.....£1595
Epson GQ3500.....£1195
Mannesman Tally 9D5.....£1195
HP Laserjet II.....£1495
HP Laserjet II T/Bin.....£2350
Panasonic KX-P4450 T/Bin.....£1495
Crystalprint WP.....£895
Crystalprint Ser II.....£1295
Qume Scripten.....£3295
Star LBP 8.....£1395
Texas Instruments 2015.....£3995
Texas Instruments 2108.....£4050
Texas Instruments 2115.....£4995

LASER ACCESSORIES

Memory Upgrade, Font Cartridge, Toner Cartridge, Developer Units, Additional Trays etc.....Call

DOT MATRIX PRINTERS

EPSON

LX800 150cps 25LQ.....£169
FX850 220cps 45NLQ.....£325
FX1050 220cps 45 NLQ.....£425
EX800 250cps 50LQ.....£455
EX1000 132col.....£565
DFX 5000 533cps 96NLQ.....£1295
LQ500 150cps 50LQ.....£276
LQ850 220cps 73LQ.....£477
LQ1050 220cps 73LQ.....£595
LQ2500+ 132col 90cpsLQ.....£765
LQ2550 400cps 132LQ.....£950

BROTHER

1109 100cps 25NLQ.....£155
1209 140cps 35NLQ.....£215
2518 DUAL 360cps 75NLQ.....£725
4018 480cps 100NLQ.....£1195
M3524 432cps Colour LQ.....£1255

STAR

LC10 Black 144cps 36NLQ.....£169
LC10 Colour.....£199
LC2410 170cps 57LQ.....£279
NB24-10 216cps 72LQ.....£434
NX-15 136col 120/30NLQ.....£286

OKI MICROLINE

OKI 182 80 col 120/20NLQ.....£209
OKI 192 80col 240/33NLQ.....£345
OKI 193 136 col 240/33 NLQ.....£425
OKI 393C colour 136 col 450/120LQ.....£895

MANNESMAN TALLY

MT81 80 col 135/27 NLQ.....£135
MT85 80 col 180/45 NLQ.....£325
MT86 136 col 180/45.....£399

PANASONIC

KX-P1081 80col 120/27NLQ.....£139
KX-P1180 80col 160/32NLQ.....£175
KX-P1124 80col 160/53LQ.....£279
KX-P1592 136col 180/38NLQ.....£289
KX-P1595 136col 240/51NLQ.....£395
KX-P1540 136col 240/80NLQ.....£475

PRINTER ACCESSORIES

Tractor Feeds, CSF, Printer Stands, Ribbons etc.....Call

DAISY WHEEL PRINTERS

QUME

12/20 136col 20cps.....£275
Sprint 11/40 136col 45cps.....£785
Sprint 11/90 136col 90cps.....£1295

BROTHER

HR20 DUAL 22cps.....£425
HR40 inc CSF 40 cps.....£785
Twinwriter.....£835

JUKI

JUKI 6200 30cps.....£339
JUKI 6300 40cps.....£595
JUKI 6500 60cps.....£765

SOFTWARE

DTP & GRAPHICS

Ventura V2.....£540
Gem Desk Top Publisher.....£199
Fleet Street Editor V3.....£110
Page Ability.....£139
Timeworks DTP.....£85
Aldus Pagemaker.....£499
Ghostscript.....£195

WORD PROCESSORS

Wordperfect V4.2.....£275
Wordstar Express.....£69
Gem First Word.....£55
Gem First Word +.....£145
Wordstar 2000.....£265
Wordstar V5.....£250
PC Write Sage.....£75
New Word.....£75
Multimate Advantage 2.....£345
Microsoft Word.....£295

DATABASES

Paradox V 2.01.....£295
Sage Retrieve.....£60
VP Info.....£75
PC Promise.....£62
Masterfile PC.....£45
DBase 2 (1512).....£60
DBase 3 Plus.....£320
Superbase Personal V2.....£60
Tas Plus.....£85
Rapid File.....£195

ACCOUNTS PACKAGE

Sage Bookeeper.....£75
Sage Accountant.....£105
Sage Accountant Plus.....£145
Sage Payroll 11.....£110
Sage Financial Controller.....£215
Map Integrated Account.....£125
Map Payroll.....£75
Map Complete Accounts.....£230
Accountability.....£65
Accounts Master.....£110

SPREADSHEETS

Quattro.....£135
VP Planner Plus.....£104
Multiplan Junior.....£45
Multiplan (Microsoft).....£120
Words & Figures.....£70
Supercalc 3.21.....£55
Sage PC Planner.....£75
Lotus 123.....£265
Supercalc V5.....*Call*

MISCELLANEOUS

We stock a wide range of consumables including Printer Ribbons - Diskettes - Paper Laser consumables - Print Wheels - Cables cleaning kit etc.....Call

PRICES ARE CASH WITH ORDER and Exclude Delivery and VAT
All goods covered by Manufacturers Warranty

MICROSOL Ltd

Access

01 739 5607

1-4 Christina Street, London EC2A 4PA

Fax 01 739 5223

The Light Program

How does a computer program work? How does it know what you want? Basil Pigg reveals the answers...

Always using commercial programs is like travelling by public transport – you can only go where they go. Writing your own programs is like owning a car – you drive where you want to, do anything you like with it and generally get a lot more use from it and have a lot more fun.

Computers are not very clever; they're just fast. The most advanced thing a computer can do is to add one and one (even then it thinks the answer is ten, because it works in base two). However, it can do this very quickly; even the most advanced game or graphics package does everything by adding one and one lots of times. Lots of beginner's guides waffle on about binary numbers and hex, but to be quite honest you could live to be 100 and never ever need to know anything about them. (That's 100 base ten, not 100 base two, which is 8, nor 100 base 16, which would be 256, nor...)

To understand what a computer program is like and what it does, imagine that you're trying to explain to Mr Spock's brother who's just come in from Vulcan how to make a cup of tea. Spock has never seen or heard of tea before but is totally logical and can follow instructions – if they make sense. He doesn't understand English, like a computer, but understands numbers and sums.

'Spock, pick up the kettle and put it under the tap,' you say. Pick up? Kettle? Tap? Ah. 'Spock, the kettle is the thing on the table here.' Table?

You hit on an ingenious solution. You go around numbering every square inch in the kitchen; the kettle is at number 154, say, the cold tap at 172, the plug of the kettle at 23 and so on. You also get your Vulcan-English dictionary and beside 'bl%87-@@g|Q', which is the Vulcan for 'pick up', you write the number 24, and so on for other words you'll need.

'24 154,' you say. Spock knows that '24' means 'pick up', finds 154 in the kitchen, and picks up the thing which is there. '37 (which you've defined as move) 154 172,' you say. He 37s (moves) the 154 (kettle) to 172 (the tap), and so on.

A nice little number

'91 (turn on) 172,' you say. Spock obligingly 91s (turns on) the tap and water pours over the kettle; you haven't told him to remove the lid yet, and Spock, being logical, only does what you say even if it doesn't make sense. So, you tell him to turn off the tap and remove the lid. What to do with the lid? He hasn't enough hands to hold the kettle and the lid. You'll want it back in a second, so you just want him to put it down somewhere temporarily while he fills the kettle with water. You might also have to take the plastic bowl out of the sink too, to make enough room to do it. The bowl and the lid go on top of each other in a stack on the draining board, and you have to take them off after the kettle is filled in the right order; Spock will try to put the bowl on top of the kettle and the lid in the sink if you tell him to.

And so you would continue with your list of instructions in this pedantic way. But you have to specify everything exactly or Spock won't know what he's to do. All computer programs are similar lists of instructions and work in this way – pedantically, exactly, specifying everything by numbers. The computer 'knows' where everything is by numbering all the locations, just like you did in the kitchen, and the location is called the 'address'. The address of the kettle would be 154, the tap 172 and so on. Instructions all have numbers: moving something might have one number, decreasing it by 1 another, and so on. And computers also have only 'two hands' and have to put things down temporarily if they need both hands to do the immediate task. That stack of things you put on the draining board in computers is called the 'stack' too.

So, the recipe for making tea would look to Spock like a list of numbers: 24 154 37 172 and so on. Computers similarly work on lists of numbers like this, and a computer program is just a list of numbers, nothing more, nothing less.

But writing a recipe as numbers in this way would be interminably difficult. A bit easier for the human would be a list of keywords rather than numbers: pick up kettle, put under tap and so on. Then you could issue your instructions almost in English.

In computer terms, those horrible lists of numbers are machine code, and in the sense of being impenetrable the name is appropriate. Machine code is first generation language (1GL). Those little bits of English are called second generation language (2GL), because they 'generate' series of numbers, i.e. 1GL. A program written in such a way is said to be in 'assembly language' or 'assembler'. However, it must still be translated into those numbers before Spock can start to understand them – it must be 'assembled'. Such translations are relatively easy to do of course.

The instructions in assembler like 'pick up' would be written for brevity as PUP or something like that, and are called 'mnemonics'.

Unfortunately the numbers corresponding to each instruction are different for each machine, and addresses of course (just as the layout of kitchens differs) and the mnemonics for each different machine are different too. Learning assembly language is tedious and difficult and only works for one machine, but is clearly very powerful and you can make the machine do anything.

• If you can make a cup of tea then you can program a computer

Sage about time

However this all takes time and you don't want to have to go through the rigmarole every time you want a cuppa. Ideally you would just like to have one command: MAKETEA. Perhaps you could add a couple of things like how much sugar you want, whether or not to have milk. So your command might be be MAKETEA(2,yes).

So, to save time later on, you write out on a sheet of paper all those instructions you had to tell him to make tea and head it MAKETEA(number of sugars,milk or not). Now whenever you want a cuppa you just say MAKETEA(2,yes) and Spock follows the instruction numbers under the heading. Simple eh?

This command is in third generation language, because it 'generates' 2GL. Clearly it's much more convenient for you because you only have easy to remember, concise commands. You're limited to the commands you've had defined, though, so it may not be quite as powerful as assembler. Third generation languages include everybody's

favourite BASIC, C, Pascal and so on, and different 'implementations' of the languages will have different commands defined like this. So the command MAKETEA(no of sugars, milk or not) in Turbo BASIC might be MAKECUPPA(milk or not, no of cups, no with sugar) in *BoredomBASIC* and not exist in *CheapoBASIC*.

These variable quantities – number of sugars and so on – are called 'variables'. In a program, the number of sugars you take might be stored as "no of sugars". If you tell the computer at the start that "no of sugars" is 2, then it understands what you mean later by the command "place no of sugars in cup".

There is a price to be paid for 3GLs too in speed. Consider this make tea command; as it's going to be used in a variety of circumstances you have to check for all eventualities. To make sure you've got tea bags you might have to include instructions to look in the cupboard and check there's enough tea, sugar, milk, check that the kettle works and so on. This often adds unnecessary time to the tea making process – if you were issuing instructions 'on site' you would be able to see plainly if you had enough tea and so miss those bits out – but has to be there. Generally 3GLs are not nearly as fast as programs written in assembler.

4GLs also exist – programs which generate 3GLs, effectively programs which write programs. For example 'Write me a recipe for Japanese tea and then make some' might be the effect of a 4GL command. However, beginners always start on 3GLs, and for most of us that means BASIC.

Nice interpretation

So, a program is a list of instructions. For example, a 'program' to prepare cream tea might include commands like MAKETEA(1,yes) and MAKESCONES(2) and LAYTABLE and so on, a bit like a recipe.

Having written your program in a word processor or text editor, you still have a bit to do. The text file you have written is no use to the computer, or to Spock – it has to be translated into the code you were messing about with earlier.

There are two ways to do this. Either you can get a Vulcan interpreter to read out your program line by line to Spock, translating it into code as you go, or you can get someone to write out the whole program as a list of code beforehand and present it to Spock when you want tea made.

The interpreted method is slower because the interpreter has to keep stopping to think how to translate each instruction, and Spock has to keep asking what to do next; the other method of compiling a list of codes beforehand is quicker because Spock has all the instructions there and can proceed as fast as he likes.

So with computer programs. You have your text prepared – the 'source code' – and now, depending on the language, you either have it interpreted or compiled. BASIC is usually interpreted; you prepare your program as a text file and then go into BASIC and type a command to run the program contained in your text file. The instructions are interpreted one by one and your program is run.

With a language like C, though, you run a program called a compiler, which 'translates' your source code into a load of machine code and stores this as a new file – called TEA.COM, or TEA.EXE or similar. You then run this file just as you would run a commercial program – i.e. type TEA at the A> prompt, or double click on the icon or whatever. In fact, commercial programs are almost all compiled programs like this, prepared with a source code.

Source code is just a text file, which means you can easily transfer it from machine to machine. But you inevitably need to modify, say, ST code in Pascal in order to be compiled by a Pascal compiler on a PC, as some of the instructions may be different in the two implementations (and of course there are differences in screen sizes, codes understood by the printer and so on).

Your machine probably has a free BASIC interpreter on it, which is a great way to start dabbling in programming. Books on BASIC will abound in your public library. ●

Technobabble

An Express assault on computer jargon

ASCII

Assembler
Language one step above machine code consisting of unmemorable mnemonics like PUSH and RST and JPNZ

BASIC
Everyone's first language. For the next pub quiz, remember that it stands for 'Beginners All-purpose Symbolic Instruction Code'

Compiler
Program which turns source code into machine code (e.g. C, Pascal)

Interpreter
Program which translates your list of instructions line by line into machine code (e.g. BASIC)

GL
'Generation language'

Machine code
Instructions in the form of numbers understood by a computer

Source code
Text file containing the instructions in the program, to be compiled later

PC Engine

With Pal TV Converter and TV Booster!

NOW ONLY £159.95 inc VAT (+ £5.00 P&P)

MENTION TECHNICAL SERVICES guarantee that if we are out of stock of PC ENGINES when your cheque or Postal Order arrives:
No cheques will be cashed before the goods are available.
You will be informed of any delays immediately by first class post.
A FREE GAME WILL BE SENT WITH THE MACHINE!! (Any previous orders on the voucher scheme will also now receive this new offer!)

CURRENT SOFTWARE TITLES AVAILABLE (New Titles arriving next month)

Shanghai	£24.95	World Court Tennis	£24.99
Wonderboy	£24.95	Alien Crush	£24.95
Drunken Master	£24.95	The Legendary Axe	£24.95
Victory Run	£24.95	Space Harrier	£29.95
Chan & Chan	£24.95	Dragon Spirit	£24.95
World Stadium	£24.95	Fantasy Zone	£24.95
R-Type I	£24.95	Vigilante	£29.95
R-Type II	£24.95	Son & Son II	£24.95
Galaga '88	£24.95	Baseball Namcot	£24.95
Nectaris	£27.95	Moto Roader	£29.95*
Deep Blue	£29.95	Honey Sky	£29.95
Dungeon Explorer	£29.95*	R*47	£29.95
Out Live	£29.95	Tiger Heli	£29.95
F1-Pilot	£29.95		

(+ £1.50 P&P / Software order)

* These Titles work on the 5 player adaptor which is also in stock for £19.95 (+ £1.50 P&P)

SEGA MEGADRIVE AVAILABLE NOW ONLY £179.95 (+ £5.00 P&P)
SIX SOFTWARE TITLES AVAILABLE BETWEEN £24.95 - 29.95

Nintendo
CD ROM UNITS ONLY £299.95 ! ! !
(+ £5.00 P&P)

NEW!!! - THE PC ENGINE AND NINTENDO SUPER JOYSTICK FOR ONLY £24.95 (+ £2.00 P&P)
PC ENGINE VHS PREVIEW VIDEO CASSETTE (36 TITLES) ONLY £6.95 (+ £2.00 P&P)
We also sell a huge range of NINTENDO products. SAE for details

SEGA Trade Enquiries Welcome

Cheques and Postal Orders / S.A.E. for details to:

We Accept EXPRESS VOUCHERS

Mention

We Accept EXPRESS VOUCHERS

29 Malcolm Place, Helensburgh. G84 9HW
Telephone: 0436 78827 for any other details. (Access & Visa Facilities soon)
Mention Technical Services bank with: The Royal Bank of Scotland, 2 Colquhoun Square, Helensburgh. G84 8SJ

HOMESOFT (UK)

Software and Hardware

ATARI — We Accept EXPRESS VOUCHERS

We Accept EXPRESS VOUCHERS — AMIGA

ALMOST PROBABLY THE CHEAPEST MAIL ORDER /RETAILER IN EUROPE

SPECIAL PACK

Complete with Standard A500, Kickstart 1.3, Workbench 1.3 Tutorial Disks , Basic + Mouse.
Also FREE TV Modulator, Photon Paint Art Package, Mouse Mat, Mouse Bracket, 10 DS /DD Disks in Library Case. PLUS the Following Games: Space Harrier, Super Hang-On and Gauntlet II for

ONLY £399.00

Philips CM8833 Medium Resolution Stereo Monitor **ONLY £235.00**	Commodore 1084S Medium Resolution Stereo Monitor **ONLY £255.00**
Cumana External 1MB Drives ST or Amiga **ONLY £95.00**	WATCH THIS SPACE: **PC ENGINE** COMING SOON!!

COMMODORE AMIGA 500

COMES COMPLETE WITH KICKSTART 1.3 TUTORIAL DISK, BASIC, MOUSE AND WORKBENCH 1.3
PLUS FREE T.V. MODULATOR AND ART PACKAGE
ONLY £355.00
OFFER ONLY WHILE STOCKS LAST
OFFICIAL PRICE INCREASE AS OF 31/3/88

AMIGA 500	*AMIGA 500*
Pack 6 Philips CM8833 Med Res Monitor Games Starter Pack with Modulator	Pack 7 Commodore 1084s Med Res Monitor Games Starter Pack with Modulator
ONLY £585.00	ONLY £615.00

PERIPHERALS

Competition Pro extra Joystick	£11.50
Competition Pro 5000 (Black) Joystick	£11.35
Cheetah 125+ Joystick	£6.40
Cheetah Starfighter Joystick	£11.50
Quickshot II+ Joystick	£8.90
Quickshot II Turbo Joystick	£10.55
Konix Speedking Joystick	£9.70
Konix Speedking Joystick + Autofire	£10.20
Konix Navigator Joystick	£12.50
3.5" DS/DD Disks per Ten	£9.50
3.5" DS/DD Disks per Fifty	£47.00
3.5" DS/DD Disks per Ten in case	£10.50
100 Capacity 3.5" Disk Box	£7.90
50 Capacity 3.5" Disk Box	£5.50
200 Capacity Posso Dleuxe 3.5" Box	£14.99
100 Capacity 5.25" Disk Box (While Stocks Last)	£4.50
3.5" Head Cleaner Kit (Deluxe)	£3.50
Twin Joystick Extension Lead	£4.50
Quality Mouse Mats	£4.50
Mouse Bracket	£2.50
Amiga Clear Perspex Dust Cover	£4.50
Four Player Joystick Adapter	£4.50
Abacus Learn Computing Books (S.A.E. for Details)	

16 BIT SOFTWARE	AMIGA	ATARI
1943 Battle of Midway	13.90	13.90
3D Pool	11.70	11.70
4th & Inches	13.90	13.90
4 x 4 Off Road Racing	13.90	13.90
Amiga Gold Hits	16.80	--.--
Arcade Force Four	--.--	16.80
Action Service	11.70	11.70
Action ST	--.--	13.90
Ballistix	11.70	11.70
Balance of Power 1990	14.70	14.70
Battlechess	16.80	--.--
Barbarian II	11.70	11.70
Batman	14.70	11.70
Battlehawks 1942	14.70	14.70
Blasteroids	14.70	11.70
Bombuzal	14.70	14.70
Butcher Hill	13.90	13.90
Chaos Strikes Back	--.--	9.70
Captain Blood	14.70	14.70
Captain Fizz	9.70	9.70
Crazy Cars II	14.70	14.70
Custodian	13.90	13.90
Cybernoid	13.90	13.90
Dark Fusion	13.90	13.90
Double Dragon	11.70	11.70
Dream Zone	14.70	14.70
Dragon Ninja	14.70	12.70
E. Weaver Baseball	13.90	--.--
Elite	14.70	14.70
Empire Strikes Back	11.70	11.70
Espionage	11.70	11.70
Five Star Compilation	--.--	14.70
Fantavision	29.00	--.--
Flight Simulator II	23.90	23.90
Flying Shark	14.70	14.70
Fright Night	11.70	11.70
Galdregon's Domain	11.70	11.70
Galactic Conqueror	14.70	14.70
Games - Summer Ed.	13.90	13.90
Ghosts 'n' Goblins	13.90	13.90
Helter Skelter	9.70	9.70
H K M	10.99	10.99
Hostages	14.70	14.70
International Karate +	14.70	11.70
Iron Lord	16.80	16.80
Japan Scenery Disk	12.70	12.70
Jet	23.90	23.90

16 BIT SOFTWARE	AMIGA	ATARI
Joan of Arc	12.70	12.70
Kennedy Approach	14.70	14.70
Kenny Dalglish Soccer	11.70	11.70
Kristal	17.70	17.70
Land of Legends	17.70	17.70
Last Duel	10.99	10.99
Lancelot	11.70	11.70
Munsters	11.70	11.70
Nebulus	13.90	13.90
Neather world	13.90	13.90
Nineteen Part One	11.70	11.70
Orbiter	14.70	14.70
Outrun Europa	10.99	10.99
Overlander	14.70	11.70
Pacmania	11.50	11.50
Pioneer Plague	14.70	--.--
Pools of Radiance	15.90	15.90
President is Missing	14.70	14.70
Prison	11.70	11.70
Project D Backup Tool	29.50	--.--
Purple Saturn Day	14.70	14.70
Rambo III	14.70	11.70
Return of the Jedi	11.70	11.70
Renegade III	14.70	11.70
RoadBlasters	16.80	16.80
Robocop	14.70	11.70
R-Type	14.70	11.70
Scenery Disk no 7	12.70	12.70
Scenery Disk no 11	12.70	12.70
SDI (Activision)	11.70	11.70
Silkworm	11.70	11.70
Skrull	14.70	14.70
Shoot-em Up Con. Kit	14.70	14.70
Star Wars	11.70	11.70
Stormtrooper	11.70	11.70
Starglider II	14.70	14.70
Sword of Sodan	17.70	--.--
STOS	--.--	19.90
STAC	--.--	29.90
Sundog - Frozen Legacy	--.--	8.90
Three Stooges	17.70	17.70
Triad	17.70	17.70
Tiger Road	13.90	13.90
Techno Cop	13.90	13.90
TV Sports Football	17.50	--.--
Thunderblade	14.90	12.90
Turbo Cup	11.70	11.70

16 BIT SOFTWARE	AMIGA	ATARI
Ultimate Golf	13.90	13.90
U.M.S.	14.70	14.70
Virus	11.70	11.70
Vindicators	11.70	11.70
Victory Road	14.70	11.70
Weird Dreams	14.70	14.70
Western Europe Scenery	12.70	12.70
Worldclass Leaderboard	13.90	13.90
Who Framed R. Rabbit	14.50	--.--
Zany Golf	16.80	16.80
Zoom	11.70	--.--
Zak McKracken	16.80	16.80
LED Storm	13.90	13.90
Lombard RAC Rally	14.70	14.70
Advanced Ski Simulator	11.70	11.70
Advanced Rugby Sim.	11.70	11.70
Black Tiger	16.80	13.90
Cosmic Pirate	11.70	11.70
Crack II (Dugger)	11.70	11.70
Dragonscape	11.70	11.70
Hybris	17.70	17.70
I Ludicrus	14.70	11.70
Inc. Shrinking Sphere	14.70	11.70
Populous (EA)	16.80	16.80
Scorpion	14.70	14.70
Trained Assassin	14.70	14.70
WEC Le Mans	14.70	11.70
Manhattan Dealers	14.70	14.70
Menace (Draconia)	11.70	11.70
Mini Golf	13.90	13.90
Microprose Soccer	14.70	14.70
Millenium 2.2	11.70	11.70
Motor Massacre	13.90	13.90

GOODS DESPATCHED WITHIN 12 HOURS SUBJECT TO AVAILABILITY

VISA — Access

AMIGA A500 ONLY

ATARI 1040 STFM £445.00 BUSINESS PACK

ST MOUSE £22.50

REAL TIME CLOCK £42.50

ATARI SM 124 HI RES MONITOR £120.00

ATARI SC 1224 MED. RES MONITOR £370.00

COMMODORE MPS 1230 DOT MATRIX PRINTER ONLY £130.00 inc Lead

ST CLOCK CARD (Internal) £24.90

ST CLOCK ROM (External) £24.90

OPEN
MON-FRI 9AM-8PM
SAT 9AM-4PM
CALLERS WELCOME

COMMODORE A501 1mb EXPANSION CARTRIDGE **£130.00**	COMMODORE A520 T.V. MODULATOR **£19.99**
WORKBENCH V1.3 **£14.99**	1352 AMIGA MOUSE **£31.50**
COMMODORE C64 HOLLYWOOD PACK **£135.99**	COMMODORE C64 ENTERTAINMENT PK **£178.99**

SPECIAL OFFERS

	AMIGA	ST
Falcon	£17.50	£14.50
Super Hang On	£14.70	£11.70
Dungeon Master	£14.70	£14.70
Gauntlet II	£15.90	£12.90
TV Sports Football	£17.50	--.--
Denaris	£13.20	--.--
Speedball	£14.50	£14.50
California Games	£12.50	--.--
Dragon's Lair	£29.50	--.--
F16 Combat Pilot	£14.50	£14.50
Rocket Ranger	£17.50	--.--
Baal	£11.60	£11.60
Afterburner	£14.70	£11.70
F.O.F.T.	£17.70	£17.70
Games Winter Edition	£13.90	£13.20
Interceptor (EA)	£16.60	--.--
Heroes of the Lance	£15.90	£15.90

ACCESS/VISA CARD HOTLINE 0772 - 452414

All prices include VAT and Postage.
Hardware included.
Europe Add £2.00 per item
Express Next Day
Courier service Available

FOR NEW RELEASES AND ITEMS NOT LISTED PLEASE PHONE US TODAY.
NEW TITLES WILL BE DESPATCHED ON CONFIRMED DATE OF RELEASE.

GOODS SUBJECT TO AVAILABILITY AND CHANGE WITHOUT PRIOR NOTICE.
OFFER ENDS 31st JULY 1989. HOMESOFT (UK) CARES FOR ITS CUSTOMERS.

HOME SOFT UK

UNIT 13
CENTURION WAY IND. ESTATE
LEYLAND, PRESTON
LANCASHIRE. PR5 2GU
TEL: 0772 - 452414 - Sales
- 455685 - Advertising

ATARI ST (C): Launched in 1985, this 16-bit machine has become a standard up-market home micro due to its built-in interfaces to link up with musical instruments, fast processor, expandability and the large amount of software available. General purpose micro excellent not only for games and leisure use but also for 'serious' applications such as word processing and programming.

Due to aggressive pricing and bundled packages it has outsold its rival the Amiga heavily in France and the UK, but the opposite is true in the US and Germany.

ATARI 8-BIT (C): Several releases beginning with the 400 in 1979 and proceeding in the next few years through the 800, XL and XE, which offered a market demanding increasingly high powered machines too little, too late.

Still a reasonable following of users who enjoy a wide range of software available through mail order.

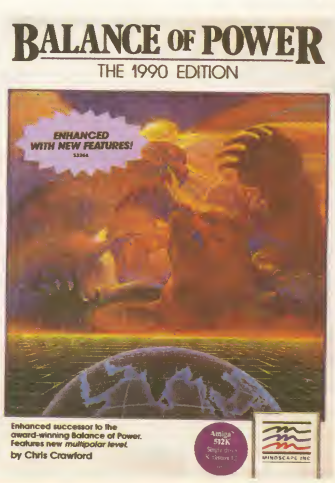
• Atari's ST has dominated UK and French markets

B

BABBAGE (P): Charles Babbage (1791-1871). He was responsible for the Analytical Engine, a mechanical, programmable device utilising a store for answers and used to calculate general mathematical problems. Unfortunately, the analytical engine was too complex for the engineers of the day to construct, and so never reached fruition.

After working for most of his adult life on the project, Babbage died without seeing his machine come to life. See also ***Lovelace*** and ***Ada***.

BALANCE OF POWER (G): State of the art wargame in which you run the USA or USSR and try to get the balance of world power. Has become the benchmark against which other world strategy games are measured.


BALANCE OF POWER
THE 1990 EDITION
ENHANCED WITH NEW FEATURES!
Enhanced successor to the award-winning Balance of Power. Features new multipolar level. by Chris Crawford

BACK-UP (T): Generic term to describe the process of copying the contents of a hard drive to floppies or tape streamer in order to protect against loss of data – a frequent occurrence.

BALL BLAZER (G): Futuristic split-screen ball game designed by Lucasfilm which was their first stab at micro computer software.

BARBARIAN (G): Sword fighting hack-em-up from Palace with minimal gameplay but maximum skin exposure in the form of Ms. Maria Whittaker clad in sauce-pan lids and leather G-string and a male cohort in nothing but a loin-cloth and mean glare. Despite the dreadful packaging, the graphics and sound are well implemented with smooth scrolling figures and digitised grunts.

To provide confusion Psygnosis brought out an arcade adventure, also called *Barbarian* but otherwise completely unrelated.

BARD'S TALE (G): Popular interactive role playing game with traditional *Dungeons and Dragons* style fantasy scenario.

BASIC (L): BASIC is everyone's first programming language. Devised in the mid '60s by John Kemeny and Thomas Kurtz, BASIC was intended to be used – not surprisingly given its name – by novice programmers to learn the rudiments of programming.

Although BASIC is still scorned as a 'toy' language, easy to use but slow, improvements over the last five years have made it very popular for data processing applications. It is the single most used computer language in the world. Now it's becoming fashionable again and with the development of very high speed processors such as those on the Archimedes it is possible to write arcade games in BASIC.

This routine prints the message in line 10 one hundred times:

```
10 a$="I must not talk in
class"
20 FOR X%=1 TO 100
30 PRINT A$
40 NEXT X%
```

BASIC is an acronym for Beginners All-purpose Symbolic Instruction Code.

BATCH (T): A term used to describe the processing of several 'jobs' by a computer in consecutive fashion – the equivalent of the instruction 'make the beds, then do the washing up, then when you've finished that, hoover the carpet'.

Batch processing was originally employed by early computers. An operator would 'feed' the computer with several jobs via punch cards. The machine would then process each job until all the jobs had been completed.

BAUD (T): A measure of data transmission rates – how fast information is being transferred between media, for example from one computer to another via a cable. Baud rate is determined by signals per second and not bits per second as is commonly (and mistakenly) assumed.

Typical baud rates are 300, 1200 and 2400 signals (typically a few dozen words of text) per second. See also ***Modem***.

BBC (CO.): The British Broadcasting Corporation, which was responsible for sponsoring the micro-computer of the same name, manufactured and marketed by Acorn, and used in conjunction with their computer awareness series of the early '80s. Designed with school use in mind, the machine had lots of user ports for expansion, easy networking and a fast and structured BASIC. Did not succeed in the home market as it should have done, because (many said) it was overpriced. Nowadays thought of as an enthusiasts' machine.

• Acorn's BBC micro. Was it overpriced?

BBS (T): 'Bulletin Board System'. The bbs is a kind of electronic notice board upon which other computer users can post messages and transmit and receive programs via a modem. See also ***Modem*** and ***Baud***.

BCS (P): British Computer Society, the leading organisation for computer professionals. The BCS monitors standards in the industry, makes awards and bursaries.

BCPL (L): Programming language notable only for its later evolution into C (see ***C***).

BEACH HEAD (G): Multi-action wargame which was the first game imported by US Gold from the United States. The game features multi stage action with smooth graphics and well implemented sound and placed US Gold firmly on the map.

BETA TESTING (T): Method of testing new software in which the software house responsible releases the product to selected customers who try it out and report back on any bugs found.

BIG APPLE (CO.): Founded in mid '88 in a flurry of T-shirts, advertising and assorted razzmatazz, but has unfortunately come to nothing in the way of products.

BIG BLUE (CO.): The – American – pet name for one of the biggest companies in the world: International Business Machines, or IBM to you and me. For details see ***IBM***.

BIOS (T): Basic Input Output System – the operating system 'level' between the user interface and the machine level. The routines that deal with the disk and memory accessing, printing to screen and so on. Bios is usually used in reference to IBM-PC and compatibles.

BINARY (T): Number base two, used to represent data within a computer (normal counting is done in base ten). In binary, 10 is two, 11 three, 100 four, 101 five, and so on ad nauseam.

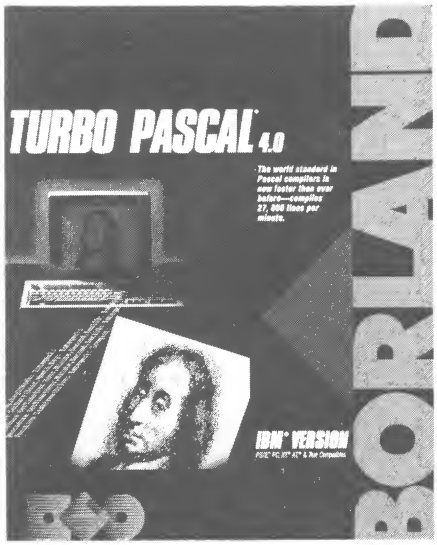
BIT (T): A bit is the smallest possible piece of data which can be represented by a computer, and can be 1 or 0. Bits are gathered together in groups of 8 to make a BYTE. An acronym for BInary digiT. See also ***Boole***, ***Byte***.

BITMAP (G): An area of computer memory reserved for graphics. The bitmap area of memory is used to hold the picture being displayed on screen. A bitmap version of the screen printed out would be exactly the same as the image on screen, dot for dot.

BITMAP BROTHERS (CO.): Purportedly the hippest programmers around, known for their hardy perennials *Xenon* and *Speedball*. Street credibility the size of a small planet, and probably egos to match. Currently working up a sequel to *Xenon*. First successful attempt by a software house (Mirrorsoft) to overhype a programming team.

BITS & BYTES (CO.): An example of the efficient new crop of micro shops springing up around the country. The shop is based in Liverpool and has a huge range of everything necessary for the micro enthusiast: software, hardware and peripherals.

BLITTER (T): An integrated circuit employed in the new breed of 68000-based 16-bit machines which speeds up the processing of on-screen graphics by moving around large 'chunks' at once, rather than individual points ('pixels'). See also ***Pixel***.



• Borland: Famous for compilers

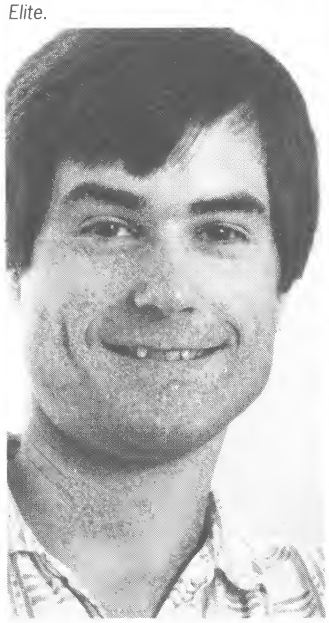
BMF (P): British Micro Federation. The BMF is a trade organisation set up to promote the world of small computing, responsible for standards within the industry, liaising with customers and the trade. Currently writing a code of practice.

BOOLE (P): Scottish 19th century mathematician responsible for the form of algebra that bears his name. Boolean algebra is concerned with the definition of logic propositions which can be either true or false depending upon their state. As this can be represented easily in binary digital form (1 for true, 0 for false) it is at the heart of most computer languages. See also ***BIT***.

BOOT (T): A.K.A. Bootstrap. Fragment of code, held in the ROM of a computer, which is executed each time the machine is started or 'booted'. Tells the computer where to look on disk to find the rest of the operating system.

BORLAND INTERNATIONAL (CO.): Founded by Philippe Khan, the company is responsible for some excellent language products such as compilers in the *Turbo* series. Also responsible for the evergreen *SideKick*, a desktop utility for the PC.

BRABEN, DAVID (P): Rich and famous and rich and rich and famous (...you get the idea?) programmer responsible for the popular evergreen *Elite*.



• David Braben: Celebrated programmer of Elite and Virus

Elite has become a classic of the space trading games genre, and gaming generally, and is available for almost every micro. Braben also wrote the game *Virus* and is – reportedly – working on *Elite 2*.

BREAKOUT (G): An early arcade game. A large portion of the screen is taken up with rows of 'bricks'. The player has to hit a ball they are keeping in play with a bat, against the bricks until they are all gone, or they have lost all available balls.

Lots of variations on the theme have been produced but the best offering is *Arkanoid*, with well-paced gameplay and late-eighties graphics capabilities. See also ***Traz***.

BROTHER (CO.): This large Japanese company is responsible for a large quantity of products, but is best known for its range of printers.

In the early '80s the company designed and marketed the Brother HR5 printer. The machine was very small and battery operated allowing it to be carried around anywhere. Although popular, it faded into obscurity largely due to its use of thermal technology for printing which gives relatively poor quality print when compared with similar priced machines.

• Brother: A Japanese company famous for its line of printers

BUBBLE BOBBLE (G): Converted cute coin-op classic in which the player adopts the role of a dragon who releases bubbles in which to trap objects. Well implemented and very popular.

BUBBLE BUS (CO.): Extreme example of the one-shot software house of the early '80s. The company had a huge success with *Starquake*, available for a range of machines, and then faded into relative obscurity.

BUFFER (T): An area of RAM in a computer or device such as a printer, which is set aside for the purpose of temporary storage for data.

The concept of a buffer is usually associated with data sent to a printer. Data is held in the buffer until it is printed, thereby freeing the computer for other tasks.

BUG (T): Mistake or error within a computer program causing unfortunate results, ranging from the annoying (e.g. #s being printed instead of £ signs) to the disastrous (satellites diving fatally out of orbit, as happened to a Russian probe to Phobos this year). See also ***Debug***.

BULLETIN 1000 (GG): The videos used by several large retailers to demonstrate and advertise new computer games.

BUS (T): A path for data made up of electrical signals to be transmitted through the internal architecture of a computer; the physical route taken by data in your micro through the machine.

BYTE (T): A gathering of 8 'bits' of binary data. The byte is used as a measurement of space in the computer's memory or on a disk, and is sufficiently large to store one character or whole number less than 255. See also ***Bit***, ***K***, ***Mb***.

• Bitmap Brothers: hip 'n' trendy programmers of Xenon and other hits

WORLDWIDE SOFTWARE
1 Bridge Street
Galashiels TD1 1SW

Credit Card Order
Telephone Line
North
Scotland
N. Ireland
0896 57004

WORLDWIDE SOFTWARE

Overseas Express Service Now Available Overseas Express Service Now

WORLDWIDE SOFTWARE
106A CHILWELL ROAD
NOTTINGHAM NG9 1ES

Credit Card Order
Telephone Line
South
Midlands
Wales
0602 252113

SPECIAL OFFER
OCEANIC C64/128 COMPATIBLE
DISK DRIVE
ONLY £112.00

OVERSEAS OVERSEAS OVERSEAS OVERSEAS OVERSEAS
Overseas customers can now contact our
Export Department at:
Worldwide Software
106A Chilwell Road
Beeston
Nottingham NG9 1ES
England

Overseas Telephone Only:
Nottingham 225368

Europe Shipping Costs Are:
£1.50 Per Cass/Disk For Normal Airmail
£2.00 Per Cass/Disk For Express Airmail

Outside Europe Shipping Costs
£2..00 Per Cass/Disk For Normal Airmail
£3.00 Per Cass/Disk For Express Mail

SPECIAL OFFER
C64 DATASETTE UNIT
ONLY £18.50

WORLDWIDE SUPER SPECIAL OFFERS ON COMMODORE SOFTWARE

COMPILATIONS

Fists "N" Throttles Cass Disk 9.25 11.50	C64	Game Set & Match II Cass Disk 9.25 13.50	C64	Ocean In Crowd Compilation Cass 11.20 Disk 13.50	C64
Frank Brunos Big Box Cass Disk 9.25 11.99	C64	Konami Arcade Collection Cass Disk 7.25 13.99			
Sports World 88 Cass Disk 7.99 11.99	C64	Magnificent Seven Cass Disk 7.99 13.99	C64	We Are The Champions Cass Disk 7.99 13.99	C64
Gold Silver Bronze Cass Disk 11.99 13.99	C64	Konami Coin Ops Cass Disk 7.99 11.99			
Supreme Challenge Cass Disk 9.99 13.50	C64	Taito Coin Op Hits Cass 9.99 Disk 13.50	C64	Giants Compilation Cass 9.99 Disk 11.99	C64
Leaderboard Collection Cass 11.99 Disk 14.90	C64	Solid Gold Cass Disk 7.99 11.99			

EDUCATIONAL

LARGE VARIETY OF EDUCATIONAL SOFTWARE NOW AVAILABLE FOR 3 TO 15 YEAR OLDS - SEND SAE FOR CATALOGUE BY RETURN

FAST DELIVERY OF ALL STOCK ITEMS BY 1ST CLASS MAIL IN UK. CREDIT CARD ACCOUNTS DEBITED ONLY ON DESPATCH SPECIAL OVERSEAS BY AIRMAIL WORLDWIDE
COMPUTER CONTROLLED DESPATCH ENSURES FAST DELIVERY ON ALL STOCK ITEMS
NEW RELEASES DESPATCHED ON DAY OF RELEASE

CREDIT CARD ORDER TELEPHONE 0896 57004

CREDIT CARD ORDER TELEPHONE 0602 252113

WORLDWIDE SUPER SPECIAL OFFERS ON COMMODORE SOFTWARE

AMIGA SOFTWARE

3D Pool	14.35
4th and Inches	14.95
Afterburner	17.95
Alien Legion	17.95
Archipelagos	18.75
Balance of Power 1990	18.75
Barbarian II	13.25
Batman	16.45
Battlehawks 1942	19.95
Black Tiger	17.95
Blasteroids	17.95
Captain Fizz	11.20
Carrier Command	16.45
Colossus Chess X	17.95
Cosmic Pirate	17.95
Crazy Cars II	17.95
Custodian	14.95
Cybernoid II	14.95
D.N.A Warrior	14.35
Denaris	19.95
Dominator	18.75
Dragon Ninja	16.45
Dragon Slayer	24.95
Dream Zone	17.95
Elite	16.45
Emmanuelle	14.95
F.O.F.T.	24.95
F16 Falcon	20.95
Fish	16.45
Football Director II	13.25
Football Man II Exp. Kit	9.99
Fun School II	14.95
Gauntlet II	17.95
Ghosts 'n' Goblins	18.75
Guerilla War	16.45
H.K.M.	17.95
Hit Disks Vol I or Vol II	18.75
Hybris	17.95
Incredible Shrink Sphere	17.95
International Karate +	17.95
Joan Of Arc	17.95
Kennedy Approach	17.95
Kenny Dagleish Manager	14.95
Last Duel	14.95
Leaderboard Birdie	17.95
Led Storm	14.35
Lombard RAC Rally	16.45
Man Hunter New York	22.95
May Day Squad	19.95

PERIPHERALS

Azimuth C64 Tape Head Align Kit	8.99
C64 Dust Cover	4.99
Action Reply MK V Professional	33.99

We Accept Express Vouchers

BLANK DISKS

SAME DAY DESPATCH WHERE POSSIBLE

C64/128 SOFTWARE	CASS	DISK
3D Pool	7.25	9.00
1943 Battle Of Midway	7.99	11.99
4X4 Off Road Racing	7.99	11.99
F14 Tomcat	7.99	11.99
F16 Combat Pilot	11.20	14.95
Aargh	7.99	11.99
Afterburner	7.99	11.99
Arcade Muscle	9.99	11.99
Artura	7.99	11.99
Barbarian II	6.99	9.99
Batman	6.99	10.50
Black Tiger	7.99	11.99
Blasteroids	7.25	11.20
Bombuzal	6.99	9.45
Butcher Hill	7.99	11.99
Colossus Chess 4	7.99	11.99
Corruption		14.95
Cosmic Pirate	7.99	11.99
DNA Warrior	7.25	11.20
Dark Fusion	7.99	11.99
Deathlord		12.99
Denaris	7.99	12.99
Dominator	7.99	11.99
Dragon Ninja	6.99	10.50
Dynamic Duo	7.25	9.99
Emlyn Hughes Int Soccer	7.25	11.20
Final Frontier	9.99	14.99
Firezone	9.99	14.99
Fish		14.99
Flight Simulator II	19.95	28.95
Football Director	6.55	
Football Manager II	6.99	10.50
Football Man II Exp. Kit	6.55	7.99
Game Set & Match II	9.00	13.50
Games Winter Edition	7.99	11.99
Gary Lineker Hot shot	7.99	11.99
Grand Prix Circuit	7.99	11.99
Gunship	11.20	14.95
H.K.M.	7.99	11.99
Hawkeye	6.99	9.45
Heroes Of The Lance		17.95
History In The Making	19.99	24.99
Hostages	7.25	11.20
Incred Shrink Sphere	7.25	11.20
Ingrids Back	11.20	11.20
Kennedy Approach	6.99	10.50
Laser Squad	6.55	11.99
Leaderboard Fam Courses II	4.99	6.99

JOYSTICKS

Cheetah 125 Plus	6.99
Cheetah Mach 1	10.95
Comp Pro 5000	12.95

C64/128 SOFTWARE	CASS	DISK
Leaderboard Collection	11.99	14.99
Led Storm	7.99	11.99
Menace	9.75	11.20
Micro Soccer	11.20	14.95
Mini Golf	7.25	11.20
Mini Office II	12.75	14.95
Navy Moves	7.99	11.99
Neuromancer		12.99
Night Hunter	7.99	11.99
Night Raider	7.99	11.99
Operation Wolf	6.50	10.50
Operation Neptune	7.25	11.20
Project Firestart		12.99
Project Stealth Fighter	11.20	14.95
Purple Saturn Day	7.25	11.20
Real Ghostbusters	7.99	11.99
Red Storm Rising	11.20	14.95
Renegade III	7.99	11.99
Robocop	6.99	10.50
Rocket Ranger		14.95
Running Man	7.99	11.99
Run The Gauntlet	7.99	11.99
Samurai Warrior	6.55	11.20
Savage	6.99	10.50
Silent Service	7.25	11.20
Skateball	7.99	11.99
Storm Lord	7.99	11.99
Techno Cop	7.99	11.99
The Deep	7.99	11.99
Thunderblade	7.99	11.99
Tiger Road	7.99	11.99
Times Of Lore	7.25	11.20
Titan	7.25	11.20
Tracksuit Manager	7.25	
Tyger Tyger	7.25	9.45
Ultima I or III or IV		14.95
Ultima V		19.95
Ultimate Golf	7.99	11.99
Vindicators	7.99	11.99
War In Middle Earth	7.25	14.99
Wec Le Mans	6.99	10.50
Weird Dreams	11.20	14.95
Western Europe Scenery Disk		14.95
Xenon	7.25	11.20
Zak McKracken		11.99

JOYSTICKS

Comp Pro 5000 Clear	13.95
Comp Pro 5000 Extra	10.95
Speedking	10.99

3.5" DS/DD With Labels Only £9.95 Per Ten
5.25" DS/DD Disk With Labels Only £4.99 Per Ten
All prices include Post and Packing in UK.
Please make Cheques and Postal Orders Payable to
WORLDWIDE SOFTWARE

AMIGA SOFTWARE

Microprose Soccer	17.95
Milenium 2.2	17.95
Navy Moves	19.95
Outrun Europa	14.95
Operation Neptune	17.95
Operation Wolf	16.45
Pacland	14.95
Paperboy	18.75
Pioneer Plague	16.45
Police Quest	18.75
Populous	19.95
Precious Metal	18.75
Purple Saturn Day	16.45
Premier Collection	22.95
Rampage	18.75
Real Ghostbusters	19.95
Red Heat	19.95
Renegade III	19.95
Robocop	16.45
Rocket Ranger	21.95
Running Man	19.95
Run The Gauntlet	19.95
Shoot Em Up Const Set	16.45
Speedball	16.45
Starglider II	16.45
Super Hang On	17.95
Tale Spin	22.95
Teenage Queen	14.95
The Deep	17.95
The Kristal	21.95
Thunderblade	17.95
Tiger Road	14.35
Times Of Lore	17.95
Time Scanner	18.75
Titan	17.95
Track Suit Manager	13.25
TV Sports Football	21.95
Ultimate Golf	14.35
Universal Military Sim	16.45
Verminator	17.95
Voyager	18.75
Wanted	14.35
War In Middle Earth	17.95
Wec Le Mans	16.45
Zak McKracken	17.95

JOYSTICKS

Speedking With Autofire	11.99
Ram Delta	7.99
Cruiser	8.99

BLANK DISKS

We Accept Express Vouchers

ALL OFFERS AND PRICES SUBJECT TO CHANGE E & OE

Tass Times in Tone Town

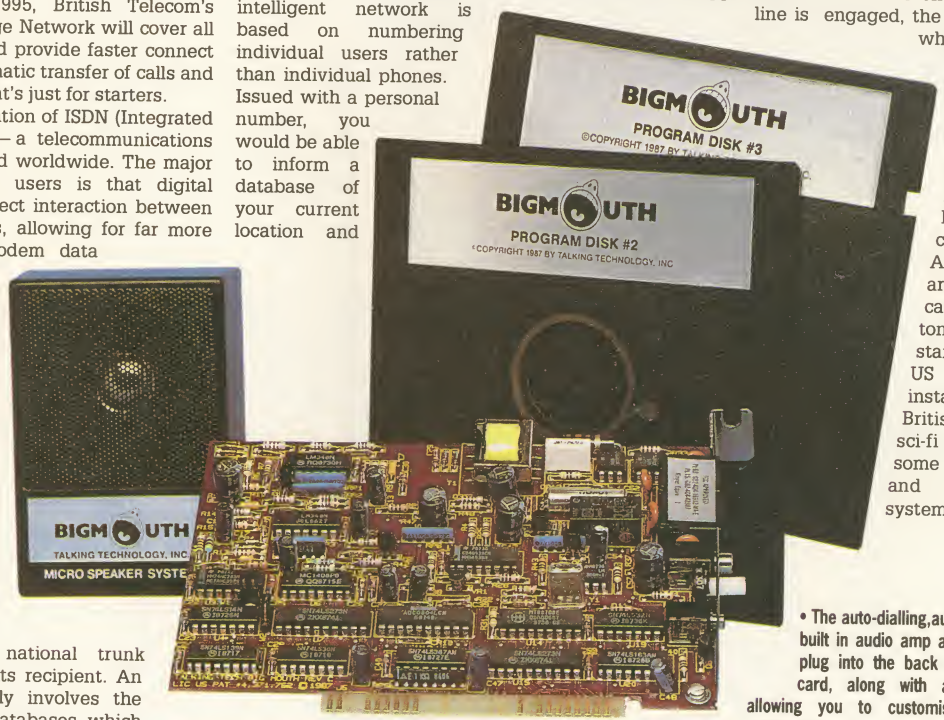
With the introduction of digital exchanges, telephone technology is being revolutionised and new hardware and software on the way is realising its potential. Plugging his PC directly into a phone socket, Andy Storer calls the shouts

The first digital telephone exchanges were introduced in Britain in 1983, allowing the old pulse system to be gradually replaced by tone dialling. By 1995, British Telecom's System X Digital Exchange Network will cover all 6,000 local exchanges and provide faster connect times, clearer lines, automatic transfer of calls and greater reliability. And that's just for starters.

System X is BT's adaptation of ISDN (Integrated Services Digital Network) – a telecommunications network standard adopted worldwide. The major advantage for computer users is that digital systems will facilitate direct interaction between phone networks and PCs, allowing for far more than just voice and modem data transfers. Voice transmission will be of digital sound quality and as fibre optic cable replaces the old copper wires, on-line information services will include hi-res video material. All hail the videophone.

Running alongside these developments are those of intelligent phone networks. In a standard network, a call is transmitted to the local exchange to be rerouted, through the national trunk network if necessary, to its recipient. An intelligent network simply involves the inclusion of mainframe databases which the local exchange consults if the call has a specific code. Although this is the way in which 0800 freephone numbers are dealt with, a true intelligent network is based on numbering individual users rather than individual phones. Issued with a personal number, you would be able to inform a database of your current location and have calls redirected to you. You would also only be charged for those calls you personally make, as opposed to those made on your phone, and if a line is engaged, the system could tell you when the person is available.

Or when the computer you're calling is available... For digital phone networks allow for much closer contact between humans and computers, and several American companies are bringing out PC cards that utilise the tone dialling system standard throughout the US but as yet only installed in a quarter of British exchanges. Whilst sci-fi videophones are still some way off, Voice Mail and Call Processing systems are already here. ●



• The auto-dialling,auto-answering Bigmouth has built in audio amp and external speaker which plug into the back of the 1/2 length plug-in card, along with a toolkit and interpreter allowing you to customise voice and telephone applications

Bigmouth Strikes...

Bigmouth, from Talking Technology of Oakland U.S.A., is a PC card designed to allow your computer to answer the phone with any message you want and sample messages from callers at 8.6KHz for later playback. You can also dial in remotely with password security and retrieve messages.

However, where Bigmouth really comes into its own is in providing a telephone answering system for a number of people. Each nominated user can be assigned a mailbox where messages to and from callers can be stored and retrieved. The system's auto-dialler can inform users when a call is being held, allowing them remote access. As such, it's a cross between an automatic switchboard and a mini Telecom Gold.

In addition, Bigmouth incorporates several other interesting features – you can configure its screens to ask questions and record responses via phone keypad, not only for incoming calls as an automatic order taker for example, but in auto-dialling mode too. So you could set it up to do some market research for you!

An alarm function, achieved by hooking your PC to your security system, completes the range on offer. If the circuit is tripped, Bigmouth will call three predetermined numbers with warning messages. A dual disk system is capable of holding about ten incoming calls so it'll only really be worth a purchase if you have a hard disk.

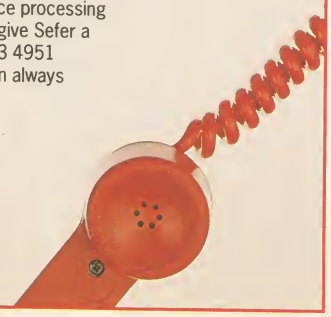
If your local exchange is tone based you can call Bigmouth on 0202 813073 for a demo. Otherwise try Staria on 0202 813141 for some human info. Bigmouth is available for £649.

```
BigmOuth  Copyright (c) 1987  Talking Technology, Inc.   8-01-87   7:28:09PM
STATUS - Box 000000 | Arrow Keys Set Bar, <ENTER> Starts & Aborts Messages

 0  New Messages    Answer on Ring  2   Distribution  OFF   Forwarding  OFF
 0  Hangups         Speaker         ON  Alarm         OFF   Local Phone ON

        NEW Events Below          OLD Events Above        Start  7:29:04P  8-01
  1  Greeting Message     Box 0        T=00:09                   3:06:28A  8-01
  2  Out of Disk Message               T=00:05                   8:18:12P  7-30
  3  Distribution Message              T=00:45                   8:47:17P  7-30
  4  Alarm Message                     T=00:23                   8:53:27P  7-30
  5  Old Msg A417         Box 0        T=00:13                   2:41:23A  8-01
  6  Old Msg A418         Box 0        T=01:11                   3:03:22A  8-01
  7  Old Msg A419         Box 0        T=02:03                   1:07:19P  8-01

DEL - Delete Msg  F1 - Wait For Calls   F3 - Autodialer   F6 - Print   F10 - Exit
INS - Undelete    F2 - Review Messages  F4 - Review All   F7 - Move    ESC - Main
```

• A Status screen from Bigmouth shows the ease with which the menu driven system can be configured

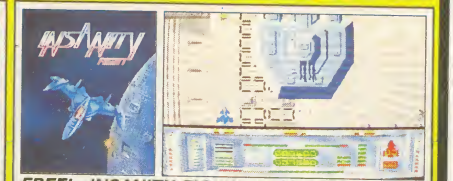
Vocatel vocals

French company Sefer's Vocatel system offers some of the features of Bigmouth – it can answer calls, deliver personalised messages and store answers – but it takes interactivity a stage further. Whereas Bigmouth relies on processing a phone's dialling keys to trigger some software commands, Vocatel actually processes human language. To preclude the need to learn speech and dialect differences your input is restricted to two or three word phrases. But the PC-based system will recognise up to 100 words and extract appropriate replies from 30 minutes of digitised speech held on 12 MBytes of hard disk. We can't say how it will cope with English, but if you have £2,000 and/or an interest in voice processing then why not give Sefer a call on 010 33 4951 2960. You can always try Franglais.



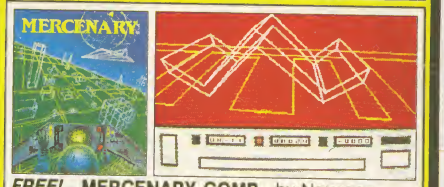
FREE! TENSTAR PACK WORTH OVER £229!

FREE! - AMEGAS - by Players



FREE! - INSANITY FIGHT - by Microdeal

FREE! - ART OF CHESS - by SPA



FREE! - MERCENARY COMP - by Novagen

FREE! - BARBARIAN, ULT WARRIOR - by Palace

FREE! - TERRORPODS - by Psygnosis

FREE! - BUGGY BOY - by Elite

FREE! - THUNDERCATS - by Elite

FREE! - IKARI WARRIORS - by Elite

FREE! - WIZBALL - by Ocean

Commodore AMIGA

£346.95 +VAT = £399

INCLUDES FREE UK DELIVERY

The Amiga 500 is one of a new breed of technologically advanced computers, which are now emerging as the new standard for home computing, based around the new Motorola 68000 chip. The A500 has 512K RAM and a 1Mbyte double sided disk drive built-in. It can be connected directly to a wide range of monitors, or to a domestic TV set through a TV modulator. Designed with the user in mind, the A500 features a user friendly WIMP environment and comes supplied with a free mouse. And, when you buy your Amiga from Silica Shop, the UK's No1 Amiga specialists, you will experience an after sales service that is second to none, including a technical support helpline and free newsletters and price lists. Return the coupon below for our current information pack, which will give details of the Silica service and the very latest Silica Amiga offers. E&OE.

WHY SILICA SHOP?

Before you decide when to buy your new Commodore Amiga computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer as well as expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Amiga related products in the UK, a full time Amiga specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. Here are just some of the things we can offer you:

THE FULL STOCK RANGE: The largest range of Amiga related peripherals, accessories, books and software in the UK.

AFTER SALES SUPPORT: The staff at Silica Shop are dedicated to help you to get the best from your Amiga.

FREE NEWSLETTERS: Mailed direct to your home as soon as we print them, featuring offers and latest releases.

FREE OVERNIGHT DELIVERY: On all hardware orders shipped to Silica Shop customers within the UK mainland.

PRICE MATCH PROMISE: We will normally match our competitors offers on a 'same product same price' basis.

FREE TECHNICAL HELPLINE: Full time team of Amiga technical experts to help you with your technical queries.

But don't just take our word for it. Complete and return the coupon below for our latest Amiga literature and begin to experience the Silica Shop specialist Amiga service.

PHOTON PAINT PACK

A500 Computer	£399.99
TV Modulator	£24.99
Photon Paint	£69.95
TenStar Pack	£229.50
TOTAL RRP:	£724.43
LESS DISCOUNT:	£325.43
PACK PRICE INC VAT:	**£399**

1084S MONITOR PACK

A500 Computer	£399.99
1084S Colour Monitor	£299.99
Photon Paint	£69.95
TenStar Pack	£229.50
TOTAL RRP:	£999.43
LESS DISCOUNT:	£350.43
PACK PRICE INC VAT:	**£649**

FREE FROM SILICA

When you buy the Amiga 500 from Silica Shop, you will not only get a high power, value for money computer, we will also give you some spectacular free gifts. First of all, we are now including a TV modulator with every A500 stand alone keyboard, so you can plug your Amiga straight into your TV at home (the modulator is not included with the A500+A1084S pack as it is not required for use with monitors). Secondly, we have added a free copy of Photon Paint, an advanced graphics package with an RRP of £69.95. Last (and by no means least!), so that you can be up and running straight away, we are giving away the sensational TENSTAR GAMES PACK with every A500 purchased at Silica Shop. This pack features ten top Amiga titles which have a combined RRP of nearly £230! Return the coupon for details.

FREE TENSTAR PACK

When you buy your Amiga 500 from Silica Shop, we want to make sure you get the best deal possible. That is why we are giving away the TENSTAR GAMES PACK worth nearly £230, absolutely FREE with every A500 purchased from us. The TenStar Games Pack includes ten titles for the A500, each individually packaged in its own casing with instructions.

Amegas	£14.95
Art Of Chess	£24.95
Barbarian, Ult Warrior	£19.95
Buggy Boy	£24.95
Ikari Warriors	£24.95
Insanity Fight	£24.95
Mercenary Comp	£19.95
Terrorpods	£24.95
Thundercats	£24.95
Wizball	£24.95
	£229.50

TOTAL RRP: £229.50 INC VAT

DO YOU OWN AN AMIGA?

If you already own an Amiga computer and would like to be registered on our mailing list as an Amiga user, let us know. We will be pleased to send you copies of our price lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Sidcup branch and begin experiencing a specialist Amiga service that is second to none.

SILICA SHOP:

SIDCUP (& Mail Order) 01-309 1111
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX
OPEN: MON-SAT 9am - 5.30pm LATE NIGHT: FRIDAY 9am - 7pm

LONDON 01-580 4000
52 Tottenham Court Road, London, W1P 0BA
OPEN: MON-SAT 9.30am - 6.00pm LATE NIGHT: NONE

LONDON 01-629 1234 ext 3914
Selfridges (1st floor), Oxford Street, London, W1A 1AB
OPEN: MON-SAT 9am - 6.00pm LATE NIGHT: THURSDAY 9am - 8pm

To: Silica Shop Ltd, Dept NCE 0489 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

PLEASE SEND ME FREE LITERATURE ON THE AMIGA

Mr/Mrs/Ms: Initials: Surname:

Address:

Postcode:

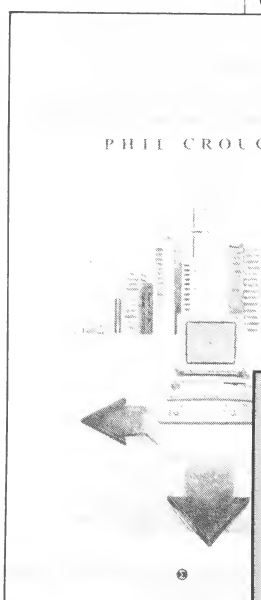
Do you already own a computer
If so, which one do you own?

Talk talk

Computer communications and networking are two of the most confusing and jargon-ridden areas of computing. Can those books in your High Street bookshop make it all clear to the budding comms user and business networker? Ron Peck flicks through...

Computer communications is an oft-discussed subject, and many micro owners must wish they knew more about it – what use it is in the first place, what you can do with it, how to go about using all these wonderful services like multi-user games and Prestel and Micronet and so on.

If you believe the stereotype images, you need a lot of equipment to be able to indulge in computer communications: anorak, National Health glasses held together with elastoplast, and the *Observer's Book of Trains*. It comes as a surprise to many to find out that comms users are just as normal as you or me (well, me anyway) and the only bar to getting on-line is the odd bit of equipment and a few words of jargon. Or, to be more accurate, several hundred words of jargon...



Networking – linking several computers together to give them common access to powerful facilities – is clearly dependent on comms techniques. It can revolutionise an office, but is still wrapped in mystery,

There are several books on the market promising to enlighten the ordinary micro user about the mysteries of comms and networks. How do they stack up?

Communications and Networks ● Phil Croucher ● £11.95 ● Sigma (0625 531035) ● ISBN 1-85058-136-3

Croucher sets out to explain comms and networks to those already familiar with their own PCs who want to extend their knowledge – which must cover most of us. This new book is in two separate sections, one for each subject.

Croucher makes a valiant attempt at taking the reader through the jargon-ridden world of comms, and it's almost normal English. How about 'multiplexing... is like driving round the M25, disastrous if you're not going the same speed and direction as the rest of the traffic'!

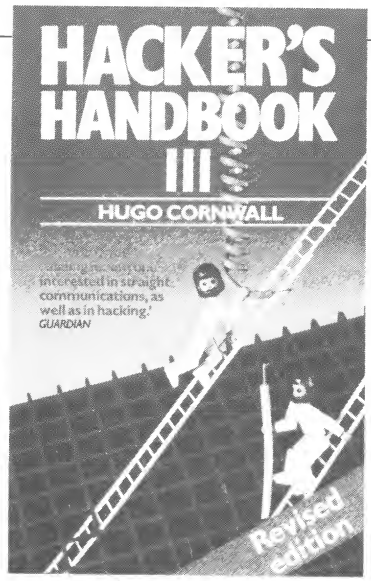
The book is admirably compre hensive and covers just about everything on the technical side, starting from definitions of a bit and byte and going on up to modems, pinouts, bulletin boards, baud rates, protocols etc etc. There are hints on how to set up your own bulletin board and even recommendations of which software packages to buy. There's a detailed section on sending faxes as well.

The networking section is again comprehensive and pleasant to read, though the experienced networker might find a couple of eyebrow-raising parts (is a false network consisting only of swopped disks called a 'sneakernet' by anyone else? And surely servers can be non-dedicated, used effectively as terminals to themselves?). But these are niggles really, and it reads perfectly OK. An ideal introduction for the office manager who wants to understand the concept and practice of networking.

All in all this is well written and gives a comprehensive coverage of comms and networking. The sheer amount of information to be taken in means it will need a lot of re-reading, but that's the fault of the subject rather than the way it is handled. The only grouse you can have is that there are few illustrations, other than a small number of boxes and wiring diagrams. Comms is admittedly not the easiest thing in the world to produce pretty pictures for, but a few (say) sample screens from bulletin boards or Prestel might have jollied things up a bit.

A good general book, and to any micro owner who wants to know what this comms business is all about, this is certainly one of the best around. Unlike many of the other intros on the shelves, Croucher is not only knowledgeable about his subject, he's interested in it, and communicates that interest to you.

✪ ✪ ✪ ✪



Hacker's Handbook III ● Hugo Cornwall ● £6.95 ● Century ● ISBN 0-7126-1147-9

The hackers handbook – notorious since first published in 1985 – has recently undergone revision and is now available as the *Hackers Handbook III*, packed full of information for anyone interested in the murky world of computer infiltration.

When first published in 1985, the book attracted a lot of attention from the media – and the police – due to some quite provocative passages detailing the nuts and bolts of hacking. After a few months in print, circulation was stopped and the book revised, with several of the more sensitive pieces removed. In the light of the imminent anti-hacking legislation (see this *Express*, page 2) many further cuts may be necessary for subsequent editions.

In spite of the revisions, the new book is a jolly good read for anyone even vaguely interested in comms. And don't let the title fool you, this book covers all aspects of setting up a modem and comms software and getting on-line, as well as the slightly more shady areas of breaking in to computers belonging to educational and other establishments.

For all techie fans who want to get on-line, this is highly recommended.

✪ ✪ ✪ ✪

Using Networking and Communications Software in Business ● PK McBride ● £14.95 ● Heinemann ● ISBN 0-434-91274-3

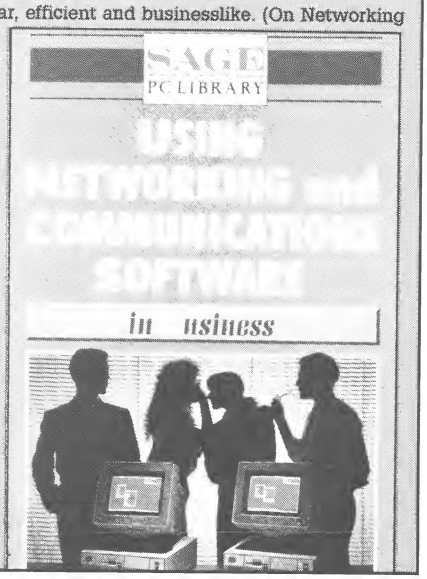
McBride covers networking first, comms second. In fact, the main emphasis is on networking and it's written for the office PC user rather than the interested home micro owner.

Networking is covered in detail but the style is clear, efficient and businesslike. (On Networking Standards: '...only two things are important about standards. The first is that they do exist: the second is they do not really go far enough.') Types of networks, hardware requirements, and importantly costings, are all explained well. The general layout is clear and easy to read through.

The book contains plenty of easily comprehensible examples and is well-illustrated (lots of screen shots plus example screens from Prestel and the home banking service that comms users can enjoy). There's also a good glossary and supplier's list at the back.

Overall a very well thought out and clear book. The section on comms seems a little bit of an anti-climax and is an added extra rather than a buying point; this is a book on networking. It achieves its aims nicely though and is an ideal introduction to any business.

✪ ✪ ✪ ✪



Our thanks to Waterstones of Bath for their help with the books.

AMIGA/PC Specialists

We Accept Express Vouchers

TRILOGIC

The Norths Leading manufacturer & retailer.
Callers always welcome

AMIGA A500 PACKAGE DEALS

A500 + MODULATOR OR MONITOR LEAD **£369.99**
A500+ 8833 STEREO COLOUR MONITOR..... **£599.99**
A500+THOMPSON 12" COLOUR MONITOR..... **£539.99**
A500+RAM EXPANSION+DRAGONS LAIR..... **£529.99**
A500+RAM EXPANSION+DRAGONS LAIR+8833..... **£759.99**
A500+MONITOR+PRINTER+THE WORKS bus. software ... **£799.99**
A501 RAM CLOCK EXPANSION..... **£147.89**
COMMODORE 64 HOLLYWOOD PACK..... **£149.99**

SOFTWARE PACK - GAMES & JOYSTICK WORTH £230 FOR ONLY £30 IF PURCHASED WITH ANY AMIGA A500.

EXTRA DISCOUNT ON SELECTED PERIPHERALS - WHEN PURCHASED WITH AN AMIGA A500 OR A2000 - ADD **£134.99 FOR CITIZEN 120D &/OR £194.99 FOR STAR LC10 MONO &/OR £244.99 FOR LC10 COLOUR &/OR £74.99 FOR 2ND AMIGA DRIVE WITH SWITCH .**

PLEASE NOTE, 1084S MONITOR MAY BE SUPPLIED IN LIEU OF PHILIPS 8833.

PLEASE PHONE FOR OTHER PACKAGE DEALS.

PRINTERS

CITIZEN 120D - BUGET NLQ PRINTER **£139.99**
CITIZEN 180E - NEW..... **£179.99**
STAR LC10 MONO - HAS MULTIFONTS **£199.99**
STAR LC10 COLOUR **£249.99**
STAR LC24-10 MONO - BUDGET 24PIN **£334.99**
STAR NX15 - BUDGET WIDE CARRIAGE 9PIN **£344.99**
CITIZEN MSP45 - WIDE CARRIAGE RRP£643.00 ..... **£359.99**
CITIZEN MSP50 - VERY FAST HEAVY DUTY **£399.99**
CITIZEN HQP45 - TOP NOTCH 24PIN RRP£769 ..... **£494.99**

ALL PRINTERS SUPPLIED WITH LEAD. ALL CITIZEN PRINTERS CARRY 2YR GUARANTEE. OTHERS HAVE 12MONTHS GUARANTEE. STAR & CITIZEN PRINTERS AVAILABLE WITH PARALLEL OR C64/128 INTERFACE.

See our catalogue for paper & ribbons.

SONY DISK BARGAINS

SONY 3.5" DS/DD DISKS PER 10 ..... **£12.99**
SONY 3.5" DS/DD DISKS PER 25 ..... **£28.49**
SONY 3.5" DS/DD DISKS PER 50 ..... **£55.99**

GUARANTEED FOR LIFE

AMIGA LEADS

AL1 - AMIGA TO SCART RGB LEAD **£9.99**
AL2 - AMIGA TO FERGUSON MC01/MC05 ETC ... **£9.99**
AL4 - AMIGA TO HITACHI/GRNADA 7PIN DIN **£9.99**
A500 PRINTER LEAD 1.5M LONG (parallel) **£6.99**
A500 PRINTER LEAD 3.0M LONG (parallel) **£9.99**
MODULATOR EXTENSION LEAD FOR AMIGA **£8.99**
BEEBULATOR LEAD 2M LONG..... **£9.99**

We make 100s of leads for the Amiga/Atari etc. Please ring for details or send for our catalogue full of TRILOGIC goodies.

AMIGA 2000

AMIGA 2000..... **£1249.99**
AMIGA 2000 + 1084S/833 MONITOR **£1469.99**
AMIGA 2000 + MONITOR + XT BRIDGE BOARD + 20MB HARD DISK + Pc 51/4" DRIVE - Less than £2000 - price too low to print - please phone now !

CUMANA CAI 354 INTERNAL 3.5" DRIVE ... £89.95

AMIGA 2000 HAS 1MB RAM, 3.5" DS/DD 880K DISK DRIVE, KICKSTART, WORKBENCH & EXTRA DISKS

AMIGA ADD-ONS

MIDI INTERFACE..... **£24.99**
MIDI KEYBOARD..... **£99.99**
MODEM V21/23 Demon II **£91.94**
DIGIVIEW GOLD Video Digitiser **£129.99**
VIDEO CAMERA B/W..... **£219.99**
DIGIPIC FRAME GRABBER..... **£249.95**
MINIGEN Genlock..... **£109.99**
GENLOCK 8802..... **£299.99**
AMIGA MOUSE (replacement) **£39.99**
AMIGA MINIAMP STEREO SYSTEM **£19.99**
AMIGA MONO SOUND DIGITISER **£27.99**
AMIGA STEREO SOUND DIGITISER **£37.99**
Public Domain Disk for above..... **£4.99**
AMIGA AUTOBOOT HARD DRIVE 40 Meg... **£599.99**
AMIGA 2000 XT Bridgeboard MS DOS 3.2 £599.99
AMIGA BBC Emulator & lead..... **£59.99** .

AMIGA DISK DRIVES

3.5" AMIGA EXTERNAL DRIVE (Oeanic)

880K FORMATTED + THROUGH PORT & SWITCH, LOW POWER CONSUMPTION, QUIET & RELIABLE.

ONLY £79.99 **Special low price**

REPLACEMENT **INTERNAL** DRIVE FOR AMIGA **£77.99**
CUMANA CAX354 3.5" 880K AMIGA DRIVE **£94.99**
CUMANA ATARI 3.5"1Mb DRI/VE..... **£107.99**
HARD CARD FOR IBM CLONES 20MB **£224.99**
BARE DRIVES FOR IBM CLONES FROM..... **£89.00**

C64 COMPATIBLE DISK DRIVE

OCEANIC OC118N 51/4" DRIVE FOR C64 & 128 £118.99 HIGHLY COMPATIBLE, DEVICE SELECT SWITCH & SEPARATE MAINS POWER UNIT.

COMMODORE 1541 MKI DISK DRIVE FOR C64 ... **£164.99**

14" COLOUR MONITORS

PHILIPS 8833 STEREO COLOUR..... **£239.99**
PHILIPS 8852 HIRES COLOUR INC SWIVEL BASE . **£269.99**
THOMPSON 12" RGB / VIDEO MONITOR **£179.99**

All monitors are Amiga compatible. Lead included free - state computer.

SCHNEIDER PCs

EURO PC MONO..... **£449.99**
EURO PC COLOUR..... **£629.99**
ADDITIONAL EXTERNAL DRIVES
HARD DISK 20meg..... **£343.85**
3.5" OR 5.25" DRIVE..... **£129.95**
Prices include monitor. Single 3.5", 720k drive, 9.54 MHz clock, Dos 3.3, **PLUS** MICROSOFT WORKS - Integrated wordprocessor / database / spreadsheet/

COMMODORE PCs

PC1 MONO..... **£359.99**
PC1 COLOUR..... **£559.99**
PC1 2ND DRIVE..... **£99.99**
PC1 EXPANDER..... **£119.99**
PC10 MONO single drive .. **£629.99**
PC10 MONO dual drive **£679.99**
PC10 MONO single drive+MPS1230 printer+THE WORKS..... **£669.99**
PC20 MONO 20meg HD..... **£899.99**
PC20 CGA 20 meg HD ..... **£1009.99** .

Full Commdore Pc range available. Plus Amstrad & SBC computers & printers. * Prices inc vat *

NEW BRITISH MADE Products from TRILOGIC

Miniamp Amiga Stereo system £19.99

AMIGA STEREO AUDIO DIGITISER £37.99

AMIGA BOOKS

AMIGA DOS MANUAL(Bantam) **£22.95**
AMIGA MACHINE LANGUAGE(Abacus).. **£14.95**
AMIGA TRICKS & TIPS (Abacus) **£14.95**
AMIGA DOS INSIDE & OUT (Abacus) **£18.95**

BUSINESS SOFTWARE

KIND WORDS (wordprocessor) **£49.99**
PUBLISHERS CHOICE (DTP)... ..... **£99.99**
PAGE SETTER **£79.99**
AMIGA ACCOUNTS PAYABLE.. ..... **£51.75**
AMIGA ACCOUNTS RECEIVABLE..... **£51.75**
AMIGA GENERAL LEDGER..... ..... **£51.75**
AMIGA INVOICING /SALES LEDGER..... **£51.75**
AMIGA SMALL BUSINESS ACCOUNTS **£80.44**
SUPERBASE PERSONAL **£59.95**
SUPERBASE PERSONAL 2 ..... **£99.99**
SUPERBASE PROFESSIONAL **£249.95**
WORKBENCH 1.3 .... **£15.99**
PROJECT D (ultimate copier for amiga) ... **£39.99**

****We stock many items not listed especially for the AMIGA & PCs please phone for details****

All prices include vat. Carriage free on orders over £15.00.

FREE COMPREHENSIVE CATALOGUE & PRICELIST.CALLERS WELCOME - PLEASE PHONE FOR FREE CATALOGUE & MAP AND TO CHECK AVAILABILITY.

HOW TO ORDER:- HOTLINE FOR ACCESS & VISA ORDERS. OR SEND CHEQUE/P.O. Please add 75p postage to orders under £15.00. Optional EXPRESS DELIVERY £1.99. Optional next day DELIVERY for computers, printers, disk drives & monitors £6.99. Books add £2.00 postage per order.

TRILOGIC, Dep cx, UNIT 1, 253b NEW WORKS ROAD, BRADFORD, BD12 0QP. Tel 0274 691115

We Accept Express Vouchers

SOFTWARE CLUB INTERNATIONAL

WHY PAY MORE FOR LESS

SUBSCRIBE NOW FOR AWARD WINNING SOFTWARE

Now for the first time in Europe – the opportunity to enjoy the benefits of the ultimate in Software Club membership.

A NEW SERVICE IN SOFTWARE

Joining SCI could not be easier. The membership fee is just £10 and members will receive (5) 5.25" 0r (3) 3.5" discs containing up to 20 quality programs. All programs are supplied in compressed (arced) format on either (5) 5.25" discs or (3) 3.5" discs.

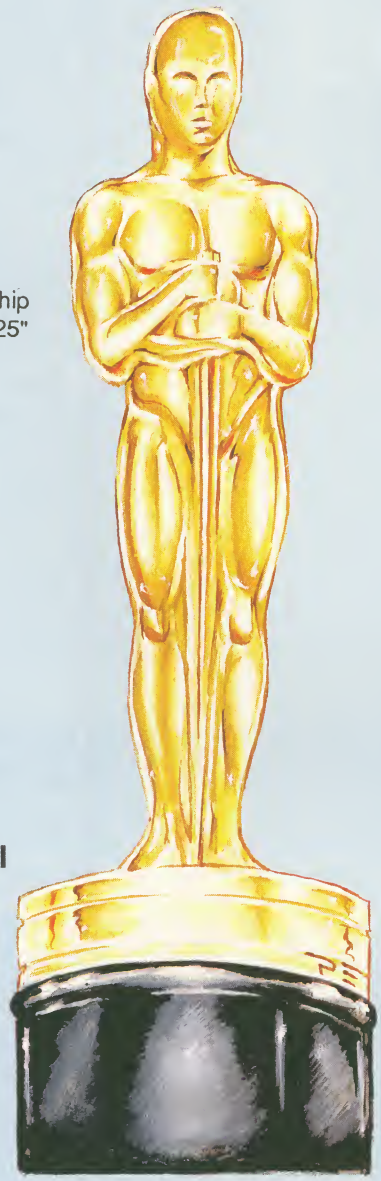
Each month our members receive up to 20 additional new award-winning shareware programs carefully selected by our panel from across the world.

If not 100% satisfied, you can terminate the agreement at any time!

All this costs just
£5.95 per month for 5.25"
£7.95 per month for 3.5"
Fully inclusive of VAT + P&P.

AVAILABLE FOR MS DOS, ATARI ST, AMIGA, MACINTOSH.

Our panels brief is simply to enable us to guarantee satisfaction to you.



SCI

Members will also have the opportunity to select "classics" from our libraries. We select the *best* software in each category and make it available to you.

- Education
- Entertainment
- Business & Finance
- Utilities
- Home Health & Hobbies

With over 12,000 delighted subscribers in the U.S.A. in less than 8 months, we know we've got the balance right!

SPECIAL: FOR MEMBERS ONLY

BLANK DISKETTES

MINIMUM QUANTITY

50	5 1/4" @	25 pence = £12.50
23	3 1/2" @	79 pence = £19.75

Prices include VAT and Carriage.

SEND TO: SOFTWARE CLUB INTERNATIONAL, 17 SHIRLEY LODGE, 470 LONDON ROAD, LANGLEY, BERKS SL3 3QY (Ref. No. NCE 2)
COMPUTER: ☐ PC ☐ ATARI ST ☐ AMIGA ☐ MACINTOSH DISC: ☐ 5¼" ☐ 3½"
AS A MEMBER OF SCI, I WILL RECEIVE 10/20 PROGRAMS PER MONTH FOR THE NEXT 12 MONTHS.
I AUTHORISE SCI TO DEBIT MY CREDIT CARD EACH MONTH UNTIL FURTHER NOTICE. I CAN CANCEL MY SUBSCRIPTION AT ANY TIME BY GIVING ONE MONTH'S NOTICE IN WRITING. MEMBERSHIP FEE: £10.00
MONTHLY 5¼" — £5.95, 3½" — £7.95

NAME: _____ ADDRESS: _____

CREDIT CARD: ☐ VISA ☐ ACCESS ☐ DINERS CLUB ☐ AMEX CARD No.

EXP. DATE: _____

SIGNED: _____ DATE: _____

BLANK DISKETTES

QUANTITY	PRODUCT	PRICE EACH	TOTAL
_____	50 5 1/4" DISKETTES	£12.50	_____
_____	23 3 1/2" DISKETTES	£19.75	_____
TOTAL:			£ _____

CHEQUES AND POSTAL ORDERS PAYABLE TO SOFTWARE CLUB INTERNATIONAL (CHEQUES ACCEPTED ONLY FOR BLANK DISKETTES. MEMBERSHIP FEES AND MONTHLY CHARGES PAYABLE ONLY BY CREDIT CARD)

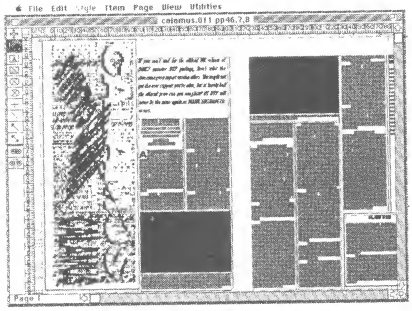
CLUBCLUBCLUBCLUBCLUBCLUBCLUB
CLUBCLUBCLUBCLUBCLUBCLUBCLUB
CLUBCLUBCLUBCLUBCLUBCLUBCLUB
CLUBCLUBCLUBCLUBCLUBCLUBCLUB
CLUBCLUBCLUBCLUBCLUBCLUBCLUB
CLUBCLUBCLUBCLUBCLUBCLUBCLUB
CLUBCLUBCLUBCLUBCLUBCLUBCLUB
CLUBCLUBCLUBCLUBCLUBCLUBCLUB
CLUBCLUBCLUBCLUBCLUBCLUBCLUB
CLUBCLUBCLUBCLUBCLUBCLUBCLUB
CLUBCLUBCLUBCLUBCLUBCLUBCLUB

ST

Make it a Mac

Like Andy Storer (see *Express* 24 page 23), I am totally bowled over by Dave Small's *Spectre 128* – the Apple Macintosh emulator for the ST distributed in this country by HiSoft. It is unbelievable! Having had it up and running for almost a month, I can honestly say that Apple has something to worry about. *Spectre* is very stable and very compatible. And a Spectre/ST combination is far cheaper than buying a Mac.

It's possible to partition part of your ST's hard disk for use by *Spectre*. What's remarkable is that access time is faster even than a hard disk-endowed Mac.



• Quark Xpress running on the ST via Hisoft's amazing Mac emulator Spectre 128

The number of programs that work without a hitch is startling. I've managed to run *Pagemaker 2, Illustrator, Microsoft Works, Freehand, MacDraw, MacPaint, MacWrite, Ready Set Go, Crystal Quest, Tetris* and *MacPlaymate*. HiSoft provides a compatibility chart which runs over several pages.

Although getting Mac applications into an ST is a hassle, things will be helped when Dave Small finishes work on a kludge that allows the ST's internal drive to read and write Mac disks. Sounds impossible, but according to HiSoft work on the device is progressing well. It is expected that an updated version of *Spectre* will be available by June. It is rumoured that Dave Small is working on AppleTalk compatibility and, if successful, will incorporate this into the forthcoming version.

If the ST disk drive can be made to read and write Mac disks, and if AppleTalk can be made to work on the ST, there should no reason for anyone to buy a Mac ever again. *Spectre* costs £199 from HiSoft (0525 718181).

Open for business

Several software companies decided to launch new product – or offer upgrades to existing items – at the recent European Computer Trade Show in Islington. Following is a list of things to watch out for in the future.

● **Protext V4.20:** Although not touted as a major upgrade (that being promised in V4.30), the manual has been completely revised and reorganised, Pressing [Alternate] D or [Alternate] T will insert the current date or time respectively into the text, the cursor may be positioned by moving the mouse pointer and clicking, installing new printer drives has been greatly improved, a faster CONVERT program is included, Greek letters may be accessed from the keyboard, a scroll lock feature has been included and a clock may be added to the status line to display the current time. That's not what I call a minor change! *Protext* V4.2 retails at £99.95. Upgrading from V3.5x costs £30, upgrading from V3.6x costs £20 and upgrading from V4.1x and V4.0x costs £15. More from Arnor on 0733 68909.

● **Tempus:** The successor to *Tempus* is finally ready and is being distributed by HiSoft (0525 718181). *Tempus* is renowned for its speed. *Tempus 2* claims to be faster and includes facilities for editing up to four files simultaneously, three cursor modes, powerful search and replace functions, text conversion utilities, keyboard shortcuts, undoable undo, auto file save and screen-off feature. Price is £39.95.

● **C Interpreter:** Also from HiSoft is a package designed to take the hard slog out of learning to program C. Rather than having to go through the tedium of compiling your program, you can run it in situ. Beginners will love it and old hacks will wonder why they can't have it so good in development version of the language. Included: GEM-based editor, 0ver 460 library functions, toolbox, trace mode and link option. £49.95 is what it will cost you.

● **PC Ditto II:** £199 buys you the new hardware-based PC emulator developed by Avante garde Systems in the States and distributed by Power Computing (0234 273000) in the UK. Its Norton SI rating – the industry accepted speed rating – is 3, which compares very favourably to the IBM PC XT rating of 1, the IBM PS/2 Model 30 of 1.8, and the Zenith EZ-20 of 2.6. All ST models are supported, up to 640K of memory is available (on a 1040 and above), installable on a hard disk, optionally boots PC-DOS from hard disk, parallel and serial ports supported, works with the mouse and supports Atari colour and mono monitors.

● **Multiface V2:** From Romantic Robot comes the upgraded hacker's tool. The new update is said to stop everything. The disk organiser can be called from anywhere within the Multiface menu system and wildcards have now been implemented. A bug which prevented the Multiface working with Mega 4 machines has also been fixed. Details on 01-200 8870.

Adrion McHerriot

Games news

For three months Telecomsoft has been put on hold. If you're wondering why, it's because BT is selling off its software arm to Microprose. Although nothing has been released from Telecomsoft in that time, game development has continued apace. The result is an impressive back catalogue of games that should hit the shelves soon after Microprose and Telecomsoft sort out the legal side of things.

Rainbow Islands, the follow up to Bubble Bobble, looks good. And the characters are even cuter than in the original. There's also Quartz (be warned, the name might change) which is a basically a frantic shoot-'em-up. And, of course, Weird Dreams and Verminator.

Minter fans will be pleased to know that the fevered hippy has finished work on Super Grid Runner. The £9.95 title is available from Llamasoft, 49, Mount Pleasant, Tadley, Hants (07356 4478).

Look out for the Xenon II from the Bitmap Brothers. I've seen it in its near-complete state. Imagine three-plane parallax scrolling, countless moving objects and better graphics than Xenon. It looks stunning – better than anything that's been before.

MAIN MEDIA
FREEPOST, ANDOVER, HANTS. SP10 4BR
Tel: 0264 333830 (24 hrs)

UNBRANDED LIFETIME GUARANTEE

We Accept EXPRESS VOUCHERS

	QUANTITY	10	20	30	40	50	100
31/2" SS/DD	135TPI	£7.95	£15.50	£22.75	£29.50	£35.75	£69.95
31/2" DS/DD	135TPI	£8.50	£16.50	£23.95	£31.25	£37.95	£74.95

	QUANTITY	25	50	100	250	500
51/4" DS/DD	48TPI	£7.25	£13.95	£26.95	£64.95	£124.95
51/4" DS/QD	96TPI	£7.95	£15.50	£29.95	£77.50	£139.95

All 31/2" Disks come complete with labels. All 51/4" Disks supplied with Write Protect Tabs, labels and envelopes and come with our No Quibble Money Back or Replacement Guarantee.

Main Media, 1 Weatherby Gardens, Charlton, Hants.

DISKETTE STORAGE BOXES

		Price Each
50 x 51/4"	Hinged Lid Lockable	£5.50
100 x 51/4"	Hinged Lid Lockable	£7.50
140 x 51/4"	Hinged Lid Lockable	£9.50
50 x 31/2"	Hinged Lid Lockable	£5.50
100 x 31/2"	Hinged Lid Lockable	£7.50

DISK BOXES WITH DISKS

50 x 51/4"	Hinged Lid Lockable with 25 DS/DD	48TPI	£11.95
50 x 51/4"	Hinged Lid Lockable with 25 DS/QD	96TPI	£12.75
100 x 51/4"	Hinged Lid Lockable with 50 DS/DD	48TPI	£20.95
100 x 51/4"	Hinged Lid Lockable with 50 DS/QD	96TPI	£22.50
140 x 51/4"	Hinged Lid Lockable with 100 DS/DD	48TPI	£35.95
140 x 51/4"	Hinged Lid Lockable with 100 DS/QD	96TPI	£38.95
50 x 31/2"	Hinged Lid Lockable with 20 DS/DD	135TPI	£21.50
100 x 31/2"	Hinged Lid Lockable with 50 DS/DD	135TPI	£44.95

All prices include VAT and Carriage. All Goods despatched within 24 hours subject to availability.
Access VISA
Cheques/P.O.'s to: MAIN MEDIA
FREEPOST
ANDOVER, HANTS. SP10 4BR
Tel: Credit Card Hotline 0264 333830 (24 hrs)

WeServe of Hampshire

Panasonic KXP1081 with ST cable and paper.
£155.00 (134.78+VAT)
120cps Epson and IBM (Multi NLQ)

	Ex.VAT	Inc.VAT
KXP Fabric Ink Ribbon	£3.74	£4.30
KXP Dust Cover	£4.00	£4.60

Philips CM8833 with ST cable £225.00(£195.65+VAT)

Citizen 120D with ST cable and paper £135.00 (£117.39 + Vat)

LOW ST PRICES inc VAT

SM124 Mono Monitor	£110.00
520STFM 1M	£262.00
520STFM Super Pack	£299.00
1040STFM	£399.00
1040STFM Super Pack	£439.00
1040STFM Pro Pack	£419.00
1040STFM + CM8833	£610.00

Star LC10 with ST cable and paper £189.00 (£164.35 + Vat)

Star LC10 Colour with ST cable and paper £239.00 (£207.83 + Vat)

PRINTERS

Citizen 180E	£158.00
Star LC2410	£315.00
Epson LX800	£179.00
Panasonic KXP1124 (24pin)	£299.00
Canon PW1080A	£159.00
LC10 sheet feeder	£59.00

(prices inc. ST cable and VAT)

DISKETTES (Lifetime Warranty)

	Inc VAT
100% Cert Error free	
10 3.5" 135tpi DS/DD	£8.50
50 3.5" 135+p DS/DD	£40.00
100 3.5" 135p+p DS/DD	£78.00
40 Disk box, hinge and lock	£5.95
80 Disk box, hinge and lock	£6.95

Phone for our best price before placing your order
EDUCATIONAL AND GOVERNMENT ORDERS WELCOME
All products have a 12 month no quibble guarantee.
Prices subject to variation without prior notification.
We are closed Saturday afternoons.
Carriage 92p (80p+VAT) Securicor £6.90 (£6.00+VAT).
We Accept EXPRESS VOUCHERS
WeServe
Dept. NCE
128 West Street, Portchester, Hants. PO16 9XE
Tel: 0705 325354.
Larger items delivered by Securicor.
VISA

We Accept EXPRESS VOUCHERS

DATASUPPLIES
(STATIONERY) LIMITED

FREE WATCH **QUALITY BRANDED DISKETTES** FREE CAMERA
3M / VERBATIM / FUJI

DESCRIPTION	1-4 BOXES	5-9 BOXES	10 BOXES
3 1/2" D/S D/D	£15.70	£13.40	£12.50
3 1/2" D/S High Density	£40.00	£34.30	£32.00
5 1/4" S/S D/D 48 tpi	£6.30	£5.60	£5.40
5 1/4" D/S D/D 48tpi	£6.60	£5.87	£5.68
5 1/4" D/S D/D 96 tpi	£12.30	£10.93	£10.58
5 1/4" 1.6 MB (IBM AT Comp)	£10.80	£9.60	£9.29

DELIVERY INCLUDED • VAT EXTRA • PRICES SHOWN ARE PER BOX

* FREE Ingersol Diskette Design Watch When you buy 5 Boxes of 3M Disks / * FREE Fuji Quicksnap Camera. When you buy 5 Boxes of Fuji Disks

WOODFREE LISTING PAPER

DESCRIPTION	BOXED IN	1-4 BOXES	5-9 BOXES	10 BOXES
11 x 9 1/2 1 PT Plain/Micro 60 gsm	2000	£12.00	£10.00	£8.80
11 x 9 1/2 1 PT Plain/Micro 80 gsm	2000	£18.00	£16.00	£15.00
11 x 9 1/2 2 PT NCR Plain/Perf	1000	£18.50	£16.00	£15.00
11 2/3 x 9 1/4 1PT Plain/Micro 70 gsm	2000	£18.10	£15.68	£14.70
11 2/3 x 9 1/4 1 PT Plain/Micro 80 gsm	2000	£18.74	£16.24	£15.22
11 2/3 x 9 1/4 1PT Plain/Micro 90 gsm	1000	£11.25	£9.75	£9.14
11 x 14 1/2 1 PT Green Ruled 60 gsm	2000	£15.38	£13.34	£11.98

MANY MORE SIZES AVAILABLE - RING FOR DETAILS - VAT IS EXTRA TO ABOVE

PRINTER RIBBONS VAT EXTRA

AMSTRAD	EACH
DMP 2000/3000	£1.93
DMP 4000	£3.36
PCW 8512/MS	£3.95
PCW 8256 Nylon	£2.86
9512 M/S	£2.00
9512 Nylon	£1.85
BROTHER	
HR 15/20/35 M/S	£2.30
M 1009/1109	£2.50
M 1409	£3.90
M 1509/1709	£4.50

COMMODORE	EACH
4023 M/S	£2.75
4023 Nylon	£3.90
MPS 801	£2.30
MPS 802 M/S	£2.75
MPS 802 Nylon	£3.90
2022/4022	£2.20
DIABLO	
HyType II M/S	£1.41
HyType II Nylon	£2.00
NEWBURY DATA	
NDR 8000	£12.00

EPSON	EACH
EX800/1000	£3.35
MX 80/LX800	£2.20
MX100/LX1000	£2.46
LX80/86	£1.80
OKI	
80,82,92,93	£0.85
84	£2.36
182,192,193	£3.60
STAR	
NL10	£3.30

PRINTED COMPUTER FORMS ARE OUR SPECIALITY !
EXSTOCK SUPPLIES AVAILABLE FOR: SAGE, PEGASUS, MULTISOFT ETC.
BESPOKE SERVICE FOR INVOICES, LETTERHEADS, CHEQUES ETC.

We also supply: Anti-static Products • Daisywheels • Disk Boxes • Labels • Printers • Printout Binders • Ribbons • Software
Carriage included on all orders of £10 or more

STARGATE INDUSTRIAL ESTATE, RYTON, TYNE & WEAR, NE40 3EQ
SUPPLIERS OF CONTINUOUS STATIONERY, MAGNETIC MEDIA AND COMPUTER ACCESSORIES
TELEPHONE: TYNESIDE (091) 413 5936
FAX: (091) 4134173

NEX LX MODEL NOW IN STOCK
EXPANDED LARGER SCREEN

NOW YOU CAN GET ORGANISED FOR NEW, UNBEATABLE PRICES!!

FOR EXAMPLE:

	RRP	OUR PRICE
PSION ORGANISER	£140	£100
PRINTER	£225	£175
64K DATAPAK	£60	£40
COMMS LINK (RS232) with IBM PC/XT PLUG	£59	£50
32K DATAPAK	£34	£28

We give further discounts to institutions such as colleges and hospitals and special prices to companies buying in bulk. We also have a selection of third party products available.

We offer prompt delivery on all orders, or you may collect, by arrangement, from our West End Office.

We Accept EXPRESS VOUCHERS

ORDERS OVER £200 FREE AIR TICKETS TO THE CONTINENT

Phone or Write NOW for details and full price list!

0836 790159
01 539 9353
01 734 2603
FAX 01 734 2604

PREMIER HOUSE
SUITE 116,
77 OXFORD ST.
LONDON W1

PC UPDATE

And PC will speak unto PC

If you have two PCs, or a laptop and a desktop, you can do one of two things to transfer data between them. You can use a disk, but then you have to make sure that both machines have the same type and capacity of drive, or you can connect the two machines together with a serial lead. The only trouble with the second approach is that you then enter the spine-tingling world of COMMS! I've seen grown men pull their own heads off rather than try to get a text file across a 9600 baud cable.

What is needed is a *simple* serial communications program with an understandable interface which will speed the whole operation up. *Lap-Link* fits the bill admirably. The package consists of two disks with the software on them, one in 5.25" format and the other in 3.5", a manual and a serial lead. The lead is terminated at each end with both types of serial 'D' plug, so you should be able to connect any PC to any other. Connect them through the comms ports, run the software on each and away you go.

The display screen is divided into two vertically, one half showing the directory of the local machine, the other the directory of the remote one. You can operate the software from either end, and move around the directory structure of either machine. It's something like magic to see the screen of the remote machine responding to commands given on the local one. There's only a moment's hesitation, as well, as the serial link works at 115,200 baud.

The main purpose of *Lap-Link* is to transfer files, and there are facilities to tag and copy just about any combination you can think of. You can make and erase directories, copy whole disks, call up a tree display to work around the directory structure and copy whole disks in one go. All in all, it's a great little program, though not a snip at £99.95. Search for a discount.

Security check

Most people probably know that the /V parameter, used with a COPY command, verifies that the copy is a true and accurate record of what was in the source file. It's a bit of a pain to have to remember the parameter, though, and useful to reflect that the VERIFY command can be used to turn verification on and off for all subsequent disk operations. VERIFY ON invokes the check and guess what turns it back off again?

Amiga, Pah!

Indulge me if you will. Those with a 386 machine sitting on or under their desks will possibly be looking at ways to organise their programs. You can run a 640K DOS partition, some EMS memory and a number of pop-up TSR programs for your word processor, appointments scheduler et al, but Liz Hall at PhaseStrong (0705) 511673 would have you consider an alternative approach.

The company has started selling a product called *VM/386*. Don't let its catchy little name confuse you, though, for this is a very useful piece of software. What it does is to make use of the 80386's virtual 8086 mode to multitask your PC. The virtual mode of the 80386 is a way of dividing up the processor's time between separate segments of memory and separate PC applications. The interesting thing about it is that the system is integrated into the hardware, which means a crash in one 'virtual machine' (VM, get it?) will not affect the programs in any of the others. This is unlike Commodore's offering on the Amiga, which superimposes multitasking on a processor never designed for it. A properly implemented operating system which uses virtual machines will let you run as many applications as memory will allow.

There are several such operating systems: *Windows, OS/2, DesqView* and *Concurrent DOS* to name but four. *VM/386* aims to do the same thing, but has been designed specifically for the 80386's special mode, which the others haven't. It all sounds like jolly fun, and I should have a copy within a few days, so I'll let you know how it works. You really need 2Mb or more memory to do it justice!

You fatting dither, you

Scanners are funny things, particularly when used in conjunction with laser printers. Most of them offer dithered grey scales rather than true ones, with either 16 or 256 shades of grey. The suppliers of the dithering devices like to have it known that true grey scales don't work on a 300dpi device like a laser. Those whose scanners do offer true grey scales claim dithers are for kiddies.

• 4-bit grey scale

• Fatting dither

I recently had an HP ScanJet Plus desktop scanner for a couple of weeks for review. It's an excellent machine and offers 16 and 256 true grey scales, as well as a choice of four dither patterns: the vertical dither, the Beyer dither, the fatting dither and the coarse fatting dither (yes, honestly!). Using HP's high quality photographic test 'target' showed that the 256 grey scale version came out rather fuzzy, though this image would probably be good for a phototypesetter with a higher resolution.

The 16 grey scale image is good, but the fatting dither is little worse. For reproduction in a desktop published newsletter or flyer, either would do. Scanning other photographs showed up the differences between the two techniques and between the different dither patterns. Some photos looked considerably better with one dither than another. Some looked better with a dither than a true grey scale. It pays to experiment if you have a scanner with a selection of dithers available.

Simon Williams

Fortune cookies

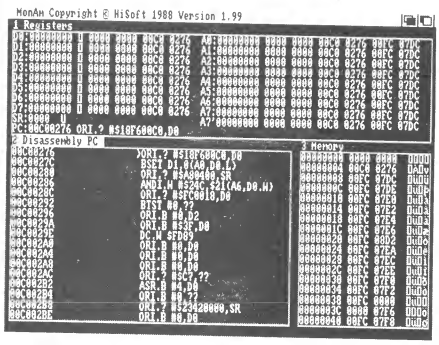
"The Atari ST is the Ford Cortina of the computer world" says Steve Lee. If so, and the Amstrad CPC is the truckers' delight, what is the PC? Answers on a postcard to PC Update.

AMIGA BLIT

Devpac supremacy under threat

If you asked an Amiga machine code programmer what their favourite Amiga based assembler was, chances are the answer they would give would be HiSoft's *Devpac 2*.

Ever since the release of the original *Devpac* assembler, HiSoft's development system has been the pick of the bunch for the vast majority of professional games programmers. Big names such as Steve Bak and Jez San have developed some of the most popular Amiga games such as *Goldrunner* and *StarGlider 2* using *Devpac* as the sole development tool.



• **Devpac 2: Under threat from Argonaut's new PDS performance system?**

Until recently, *Devpac*'s supremacy in the assembler market had been absolute, and with the announcement of an even more powerful professional version coming soon, HiSoft's grip on the market seemed set to continue. The only complaint levelled at *Devpac* by many professional programmers was that although the system was fast compared to the competition on the Amiga, it was still rather sluggish when compared to the PC-based PDS systems.

For those of you who have not heard of the now infamous PDS system, it basically consists of a PC compatible (usually 286 or even 386 based) that contains a board connecting it directly to the particular machine the programmer is writing for. Cross development software on the PC allows programmers to write, assemble and debug their code on the PC and have the results instantly downloaded to the destination machine. Assembling and downloading code under PDS has to be seen to be believed; it is almost instantaneous!

Unfortunately, PDS systems do not come cheap (If they did, I would have bought one yesterday!). So what can the average home user do? Until recently, you either grew old with *Devpac* or went without; it was as simple as that! Fortunately, in about three months time an assembler development system is due for release on the Amiga that promises the performance of a PDS system at the same price as *Devpac*.

Who is responsible for this phenomenal achievement? Non other than Jez San, a former devoted user of *Devpac*. When I recently phoned Argonaut, Jez gave me a complete run down of the capabilities of Argonaut's latest masterpiece.

On the surface, the *Argonaut Assembler Development System* will look and function in a similar fashion to HiSoft's system, but the Argonaut touch will be more than evident. Firstly, the text editor will be a far more powerful and considerably faster beast than HiSoft's. The editor will allow multiple files to be open at the same time and text to be cut and pasted between them.

Take a look at the assembler, and things really start to cook! The assembler will actually function at an astonishing 10 times the speed of the *Devpac* assembler. Of course, that's only on a standard 68000-based Amiga; stick a 020 or even an 030 board in your Amiga and the *AADS* will actually function faster than a PDS system!

AADS was originally developed as an in-house system for use on Argonaut's fleet of Amiga 2000s, but Jez soon saw the system's potential as a commercial product. Jez hopes that he may even be able to tie the system up with the manufacturers of the PDS system and have PDS market the product as well as their PC-based systems.

Why was *AADS* developed? Mainly because Jez felt that *Devpac* no longer filled their particular needs and therefore an alternative had to be found. Expect to see the *AADS* in about three months time, priced at the astonishing price of just £60 (I've placed my order already!).

The Key to Consolation

The standard AmigaDOS CLI window is a pretty primitive beast at the best of times. The lack of any form of command line history or editing can be a real pain at times unless you've mounted the new 1.3 console handler or a public domain utility such as the popular *ConMan* console handler. Surprisingly, although the basic console looks pretty inflexible, it does feature several hidden keyboard controls that can make its use almost bearable (well almost!).

You are probably already aware of the key combinations used to break out of batch files and programs (<CTRL> + <C>, <D>, <E> or <F>). But did you know that there are a further nine key combinations hidden away in the console handler code? Below is a complete run down of the key combinations available:

<CTRL> + <G>	Causes the screen to flash.
<CTRL> + <H>	Steps back and deletes a single character
<CTRL? + <J>	Same function as the <TAB> key
<CTRL> + <K>	Moves the cursor up one line
<CTRL> + <L>	Clears the console window
<CTRL> + <M>	Same as the <RETURN> key.
<CTRL> + <N>	Turns on the alternative character set
<CTRL> + <O>	Reverts to default character set
<CTRL> + <X>	Erases the contents of the current line

Message Port

If you have any comments on any issues raised within AmigaBLIT, then I'd love to hear from you. Similarly, if you have any tips or tricks that you feel will be of interest to others, then why not send them in. Write to: AMIGABLIT, NEW COMPUTER EXPRESS, 4 QUEEN STREET, BATH BA1 1EJ.

What ever happened to...

The Amstrad marketing person that, when questioned about the Amiga after its initial launch, said "If the Amiga was £400, Id buy one tomorrow!" I wonder if he ever did buy that Amiga he had promised himself?

Jason Holborn

MEDUSA

We Accept EXPRESS VOUCHERS

55 Harrow Drive, Edmonton, London, N9 9EQ

01-803 0893 Computers

ATARI 520 STFM	ATARI 1040 STFM	AMIGA 500	AMIGA 500
"Explorer Pack" 1 Meg Disk Drive Mouse, Ramarama Game £265	"Professional Pack" VIP Professional Microsoft Write Superbase Personal £425	"Software Pack" Workbench 1.3 FREE Modulator £230 Software £369	"Airmiles Pack" Workbench 1.3 Modulator, 500 Airmiles £125 Software £439

Philips CM8833 inc Lead £229	Seikosha Printers Low Prices From £121	Cumana Drive 1 Meg 3 1/2' SF/Ag £95	Casio C2 2305 Midi Keyboard £145	Modems, Scanners, Samplers, Digitisers £ Phone

1000's :- Software Titles 8 Bit / 16 Bit at over 30% Discount

10 3 1/2" DD/DS Disks	£8.99
50 3 1/2" DD/DS Disks	£39.99
Cruiser Joystick	£6.99
Pro 5000 Joystick	£10.99
Speedking (Auto)	£9.50

Computer Starter Pack:- £29
10 DD/DS Disks, Disk Drive Cleaning Kit, Storage Box, Mouse Mat Mouse Holder, Joystick + Twin Ext Lead

This is just a small range of our products available - pleae ring for your requirements - Cheques /PO payable :- MEDUSA COMPUTERS

COMPUTER REPAIRS
Fixed Super Low Prices!
Inclusive of parts, labour and VAT
1 WEEK TURNROUND

FIRST AID FOR TECHNOLOGY

*** AMSTRAD / SINCLAIR AUTHORISED ***

SPECTRUM 48K	£14 + Free Game	C64	£22 + Free Game
SPECTRUM 128	£18	VIC 20, C+4	£22
SPECTRUM + 2	£27	1541 DISK DRIVE	£36
C128	£29	C2N TDECK	£19
C16	£18	C64 PSU for sale	£20

Please enclose payment with item - 3 month warranty on repair
Please enclose advert with repair

W.T.S. ELECTRONICS LTD
(NCE 270489)
Studio Master House, Chaulend Lane, Luton, Beds. LU4 8EZ
Tel: 0582 491949
(4 lines)

We Accept EXPRESS VOUCHERS

Standard terms of business apply

Pageplay

We Accept EXPRESS VOUCHERS

Amiga Consultancy

If you or your company are using or thinking about using Amiga computers in professional applications we can help.

We are computer consultants who will advise you on, supply you with, train you in and maintain complete systems based around the Amiga.

We deal in desktop publishing and design, desktop video and animation, database management and presentation and allied business uses. In fact whatever your business problem there is a good chance that we can find a healthy solution.

For further information call us at the number below.

01 284 0903

COMPUTER STATIONERY (U.K.)

**Commercial House, Commercial Road,
South Shields, Tyne & Wear, NE33 1RW
Telephone: (091) 455 4300 Telex: 537390 Fax: (091) 455 1847**

**PROBABLY THE BEST PRICES IN THE U.K.!
- ALL INCLUDE V.A.T. AND DELIVERY**

DISKETTES	Nashua 5 1/4" DS/DD 48 TPI	£0.42 each
	Nashua 3 1/2" DS/DD 135TPI	£1.07 each
	Amsoft 3" CF2	£1.99 each
RIBBONS	Citizen 120D	£2.29
	Epson MX100/FX 100	£2.52
	Commodore NPS 501	£2.38
	Oki Microline 192/193	£3.32
	STAR LC24-10 (Original)	£5.68
	Amstrad DMP 2000/3000	£2.50
	Amstrad 8256/8512	£3.25
	STAR LC10 Nylon	£2.89
	(All other makes at up to 50% off R.R.P.)	
DISK STORAGE	5 1/4" 10 Capacity	£1.20
	5 1/4" 50 Capacity	£4.50
	3 1/2" 40 Capacity	£4.50
*** **STOP PRESS** ! !	Laser Cartridges Canon MK1/MKII £57.90 (Inclusive)	

These are just samples of our fantastic offers. Please send £1.00 for our full product listing (refundable), or ring for a price.

**Cheques/Postal Orders/Official Orders to:
Computer Stationery U.K.
Commercial House,
Commercial Road,
South Shields,
Tyne & Wear,
NE33 1RW**

We Accept Express Vouchers

We Accept Express Vouchers

(All Orders under £10.00 - Please add £1.00 Postage & Packing)

LOOK NO FURTHER

You have found Britain's one and only supplier of high quality learning software

Subjects now available include.....

French, German, Spanish, Italian, Welsh, English, General Knowledge, Arithmetic, Spelling, Geography, History, Science, First Aid, Natural History, Sport, England, Scotland and many others.

Kosmos are specialist producers of Educational Software designed to help you and your children *enjoy learning* from your computer. Our programs even allow you to add your own lesson material.

Write or telephone for.....

a FREE 20-page CATALOGUE of our Educational and Leisure software and details of how to claim your Kosmos T-Shirt.

KOSMOS SOFTWARE

Kosmos Software Limited
FREEPOST (No stamp needed)
DUNSTABLE, Bedfordshire, LU5 6BR
Telephone 05255 3942 or 5406

SPEX

Screen shot

Given the fact that the main principle behind most games is to kill the enemy, be they reds, aliens or Commodore owners, it seems a bit stupid to expend unnecessary energy jiggling your joystick or bashing the keyboard to achieve this aim. It'd be a lot less trouble for all concerned if you could simply point a gun, pull the trigger and send those alien scum back to whence they came.

Up until now, only the sad individuals who own a Nintendo or Sega console have been able to use this method with any regularity. The Speccy's had its light guns in the past, and even a wacky one where you fired real pellets at a flimsy target off-screen.

For various reasons, mainly connected with price and software compatibility they never caught on. Latest news to reach me could change all this. In a joint venture, Amstrad and Mastertronic are preparing to release The Magnum – a light gun specifically for the Spectrum. With any luck this should establish itself as a Spectrum standard for controlling games, just like the Kempston interface did. For starters, the price is right – a meagre £30 – and, secondly, the huge names behind the venture should ensure good software support. A light gun won't do much good promoting the Spectrum as an all-round computer, rather than just a kiddies' game machine, but just think of your *Operation Wolf* high score – and buy it!

Alternative gameplay

Good to see some slightly different games being released to break up the almost continuous stream of coin-op conversions. *Times of Lore* is very un-coin-op-ish, being a role-playing game which combines *Gauntlet*-style graphics and adventure-style puzzles and combat. If the plot doesn't insist on those ridiculous vowel-less fantasy-sounding names, it could well be worth buying.

Also promising to be a tad different to the norm is *Nightbreed*, the game based on Clive Barker's latest book *Cabal*. This is going to be an arcade adventure full of evil creatures from a parallel dimension. It'll probably be marketed as a hide-behind-the-sofa product, but as with every piece of software that's meant to frighten you, it won't do in the least. The things in computing that really give you nightmares are multiloads, wordprocessors that won't print, games that make you start right back at the beginning every time you lose a life, adventures which crash when you enter a swear word, etc etc.

+2A plusses?

As you may have noticed, the new range of Spectrum peripherals rumoured in one Spectrum-specific mag to be coming from Amstrad itself still haven't appeared. I was ready to follow the half-witty journo theory I formulated in issue 23 until someone pointed out a very interesting fact to me, if you're sitting comfortably...

This very interesting thing appears in the +2A's revised manual. (You should remember this machine was a redesigned +2 with a different coloured chassis and innards closely resembling a +3.) It says that you will be able to buy an "S-1" interface which will allow you to use one or two of Amstrad's 3" drives with the machine. This certainly helps back up the mutterings that a stand-alone drive for +2 owners is set to spurt forth from Amstrad. Unfortunately, no date is given. It just says "When available." It looks like we will just have to wait 'till *Express* runs the official story. In the meantime, maybe crossing every spare part of your anatomy might help.

Not particularly strange and probably completely untrue fact no.1 (in a series of 1)

Even before the Amstrad buy-out of Sinclair, Alan Sugar's son used to own a Spectrum in preference to the machines his old man made!

Unknown territory

The Spectrum's been around for a good few years now, so no doubt most of you think you know everything there is to know about the machine. Sorry to dash your smarminess! Here are a few undocumented features that were omitted from the manuals, and only known by real smartarses. Like me, for example.

Righting wrongs

Barely two weeks ago this column was the site of some heavy criticism directed at the BBC's Software Show, and the unfair way it ignored the Spectrum.

As if by magic, a kind of peace offering is on its way. Apparently, Horizon is going to devote an upcoming programme to everyone's fave computer guru – the boffin with the mostest – let's hear a big hand for (pregnant pause) Sir Clive Sinclair! (Cue applause) It's great to see every Spectrum owner's pin-up have his life story told to the nation. The Spectrum undoubtedly played a big part in his illustrious career, so I'm looking forward to seeing huge amounts of air time given over to it.

Out of all the major computer industry figures, Sir Clive is without doubt the best. He's got the highest IQ, isn't overly mercenary and doesn't sport a ridiculous beard. Not only that, he's also pretty special with the ladies. That Bernadette Tyan he recently married – "Wotta Stunna!!" was the Sunday Sport's verdict. Who would argue with that?

• Our hero

On the original Sir Clive 128 machine there are a lot of little-known and fairly useful editing features:

- To undelete a deleted line – Extend mode and N
- To delete a word in front of the cursor – Extend mode and W
- To move the cursor ten lines up the page – enter Extended mode and press P
- To move it down ten lines – press Symbol Shift and I
- To move cursor to the start of current line – press Extend mode, Symbol Shift 2/GR Y
- To move the cursor to the end of the current line – press Extended mode M/GR X

And that's not all – there are more secrets to be uncovered inside the sleek black exterior of the +3.

To access a test mode, do the following: Holding the BREAK key, reset the computer. Some colour test bars appear. Press keys QAZPLM down at the same time to enter a comprehensive test mode which lets you check lots of things, including printers and joysticks. Not a lot of people know that, he says predictably.

Robin Alway

SECTOR 64 SECTOR

News

Did you know (I bet you did) that Bruno Brooks, the top Radio One DJ, uses a Commodore 64 to control his curtains and doors, along with an Amiga to control his record collection (well I never)? If you didn't know that, then remember where you read it first.

New Releases

Silk Worm ▪ Sales Curve ▪ £9.99

This is a right to left scrolling parallax blast-'em-up, where you control either your helicopter or your armed jeep across a deadly battle area covered with all kinds of nasties trying to bump you off. This is a brilliant conversion on the 64 of a very cool and addictive arcade game. Well worth a look.

Veni video vici

– I saw it, I played it, I videoed it.

Now here's a useful item for anyone who is going a rather subtle hue of green looking at those Amiga owners adding titles to their video tapes.

It may be of some interest to you to know that by plugging the Commodore's TV lead into the video and then plugging the video lead into the television, you can record graphics and animations.

For instance, while visiting a friend we hooked up his C64 to a video recorder and produced a rather snazzy action-replay of a game of *Gauntlet*.

This technique can be used to produce demos such as the Bulletin 1000 that can be seen in larger branches of Boots and John Menzies.

Tips

Gary Gould is back at the hacking scene, with a hot poke for *To Hell And Back*:

Load the game, reset your micro and enter:

POKE 32371,173 for lots of lives

SYS 30464 to start the game

Meanwhile, gamesters having trouble with *Ghostbusters* need worry no more. When asked if you have an account, answer "yes" and tap RETURN instead of entering your name. Entering 458 as your account number will result in so much money it won't fit on the screen!

Want to get to Level Two on *Vindicator*? The password is ENOLAGAY – no doubt the programmers are fans of OMD!

Bang!

Only recently my Commodore 64 decided to stop working. Something was wrong with the power supply, and although the light was one the screen remained black.

Upon taking my injured beast to a specialist, I was informed that this is a fairly common problem among 64s and that I was lucky that it hadn't exploded on me!

• Is your Commodore 64 about to blow up?

Not being able to place the blame on little computer people, the specialist promptly relieved me of the sum of £25 for a new power pack.

Naturally, my Commodore resumed business as usual, but I still find it hard to believe that nationwide people are ducking bits of silicon as their pride and joy explodes all over the place.

If anyone has come across this we'd be interested to hear from you!

Ian + Mick + Nick

DIY Timer

This week's listing is nothing special, as it came off the tops of our heads – so if you have a routine which isn't too large and you'd like it printed in this column, then write to Sector 64, New Computer Express, 4 Queen Street, Bath BA1 1EJ.

This type-in is a timer, so that while you're programming you can see just how long you've been typing away (very useful indeed).

The last four lines allow you to enter your own numbers so that you can start the timer at any point. So, for instance, if you wanted to start at 19:29 you would just 01 in the first line then 09 in the second and so on.

It's not that big so why not have a go.

```
0       FORL=0TO145:READA:POKE49152+L,A:NEXTL:A=48
10      DATA 120,169,13,141,20,3,169,192,141,21,3,88,96,162,0,189,133,192
20      DATA 157,31,4,232,224,9,208,245,162,0,169,1,157,31,216,232,224,9,208
30      DATA 246,169,22,238,39,192,173,39,192,201,51,208,65,169,0,141,39
40      DATA 192,238,141,192,173,141,192,201,58,208,50,169,48,141,141,192,238
50      DATA 140,192,173,140,192,201,54,208
60      DATA 35,169,48,141,140,192,238,138,192,173,138,192,201,58,208,20,169
70      DATA 48,141,138,192,238,137,192,173
80      DATA 137,192,201,54,208,5,169,48,141,137,192,169,1,141,25,208,169
98      DATA 127,141,13,220,169,129,141,26,208,76,49,234,58,18,5,13,48,48,58
99      DATA 48,48,0,0,0,0
100     POKE49293,A+0:REM
101     POKE49292,A+0:REM THIS SETS TIMER
102     POKE49290,A+0:REM TO 00:00
103     POKE49289,A+0:REM
104     SYS49152
```


COMPUTER CONNECTIONS

TOP QUALITY Centronics Parallel Printer Cable (RS232 end screw fixing) – 2 metres £5.99!! Suitable for All Atari STs and Amiga A500/A2000s,

We Accept EXPRESS VOUCHERS

AMSTRAD CPC 464 & 128

6 pin din plug to 6 pin din socket monitor extn lead 2.5m £5.75
2.1mm Power plug to 2.1mm Power socket power extn lead 2.5m £6.50
Both of the above cables 1.0m..£10.50 2.5m £11.99
34 way edge conn to 36 way centronics plug - parallel printer lead 1.0m..£8.99 2.0m..... £9.99
34 way edge conn to 36 way IDC socket for second disk drive 1.0m £7.95

SINCLAIR SPECTRUM

8 pin din plug & 3.5mm jack plug to Scart plug for 128 or 128+2 to TV/Monitor with Scart socket 2.0m ...£8.95
9 way D plug to 9 way D plug joystick adaptor for Atari style joysticks 1.0m £5.50
9 way D plug to 25 way D plug. Sinclair interface 1 to printer with RS232c serial interface. 1.0m £4.95
2.0m £5.95

COMMODORE CBM64

5 pin din plug to Scart lead 2.0m £5.99
5 pin din plug to Phono Plug - to Colour monitor 2.0m £4.99
6 pin din plug to 6 pin din socket - serial port extension 2.5m £5.75

CABLES! CABLES! CABLES!

Standard Centronics Printer Cables for IBM, PC, Atari ST, CBM Amiga 500/2000 etc. 25 way RS232 plug to 36 way centronics plug – High quality screened cable with Thumbscrews.

2.0m £6.99 – 3.0m £9.99 – 5m £12.99

Ultra high quality centronics parallel printer cable with very heavy shielding for situations involving printers sited beyond the normal 5 metre limit of the parallel interface. They allow for transmission up to 15 metres!

7.5 metres £44.99 10 metres £49.99
15 metres £59.99

ALL THE FOLLOWING CABLES ARE 2 METRES LONG UNLESS OTHERWISE STATED

All kits come with diagrams.
ST 13 pin din mon. plug to Philips 8533 RGB monitor scart 2 metres £9.50
ST 13 pin din mon. plug to Sony KX14 RGB monitor scart 2 metres £10.95
ST 13 pin din mon. plug to TV/MONITOR scart 2 metres £9.50
ST 13 pin din mon. plug + 2m of cable £4.50
ST 13 p/d plug with 2m cable all pins connected..£6.50
ST 13 p/a mon. plug to two Phono plugs (comp video needs internal modulator) £5.50
ST Switching unit between Mono and Colour monitors £19.50
ST 14 pin din plug to 34 way IDC socket (adapter & cable for 5.25" drives with Shugart interface 1.5m £19.99
ST14 pin din + 2 metres of cable..... £5.00
TWIN JOYSTICK EXTENSION LEAD – 10 INCHES £5.75
COMMANDO 4 JOYSTICK – 4 Fire buttons + autofire £8.95
AMIGA 23w D socket & twin phono to Scart plug (analogue RGB) £10.99
AMIGA 23w D Socket to Mon with EIJA socket (TTL RGB T)..... £11.99
AMIGA 23w D Socket to 9w D plug (IBM standard mon TTL TGB T)..... £9.99
AMIGA 23w D Socket to 9w D plug (NEC multisync Analogue RGB) £9.99
AMIGA 23w D Socket to 9w D socket (Philips 8873 TTL RGB T) £9.99

Large range of cables available for PC & compatibles, all Amstradds, Spectrum, Apricot, Apple/Mac, Commodore Amiga, 64 & 128, Atari ST, XL/XE, MSX and more. Just write for full product list.

Please make cheques and Postal Orders payable to:

Telephone 03548 590 COMPUTER CONNECTIONS Telephone 03548 590

Credit Card orders accepted on Access/Mastercard/Eurocard.
All orders under £5 please add 50p. Over £5 P&P free.

Ashlaw House, Euximoor Drove, Christchurch, Wisbech, CAMBS. PE14 9LS

HI TECH SUPPLIES

0481 714183

DISCS & RIBBONS

5.25" DS DD 96tpi

25	50	100	250	500	1000
£7.50	£14.50	£28.00	£65.00	£115.00	£220.00

3.5" DS 135tpi

25	50	100	250	500	1000
£21.50	£42.50	£83.00	£205.00	£400.00	£790.00

5.25" DS DD 96tpi
WITH ENVELOPES PRINTED WITH YOUR LOGO etc.

500	1000	2500	5000
23p	22.5p	21p	20p

RIBBONS
TOO MANY TO LIST, FOR EXAMPLE

AMSTRAD 8256	£3.95
BROTHER HR 15, 25, 35	£3.10
EPSON LX 800	£2.65

HI TECH SUPPLIES
3 ST JAMES STREET
ST PETER PORT
GUERNSEY
CHANNEL ISLANDS

We Accept EXPRESS VOUCHERS

We Accept EXPRESS VOUCHERS

All prices include VAT & Postage

PCW PATCH

Badly developed characters

The PCW printer is sneered at by many but is a remarkable piece of budget equipment. You just plug it into the PCW and away you go: whatever is on screen comes out on printer. (Ask another computer owner to put a £ sign on screen and get it printed out as a £ and not a #. This is even beyond British Rail at Bath whose on-platform monitors display a day trip to Weymouth as costing #3.10).

However, if it goes wrong you have the problem of fixing it, as Amstrad won't help you find a replacement. Isenstein (0244 312986) will fix yours for you if it goes wrong, giving a min to max price range of £18-£80 (8256/8512) and £25-£115 (9512).

The most common problem with the 8256/8512 dot matrix is that the pins get worn and stop firing properly. First symptoms seem to be that the tops and bottoms of letters come out faint – i.e. tops of capitals, ls, hs and so on, and bottoms of gs, y, and js.

The easiest solution (although I suspect it's only delaying the inevitable) is to lift the black panel with the 'Amstrad' logo on it straight off. On the right hand side there's a blue or red plastic knob and ratchet. The arrow points the current setting of the distance of the print head from the paper; if you move the head closer the faintness will virtually disappear. Move the knob to the closest setting (towards you) and replace the cover; your print quality should be much better.

How many years can you expect to get out of your PCW? Well, my printer has undergone three years of constant hammer and, though a bit raggy round the edges, is still working fine. I reckon four to five years of useful service is about right.

dBasement bargain

dBase, despite recent supply problems, is still available for the PCW from Language Services (0843 69847) for £99. Apparently *dBase* is currently being worked into a special PCW version by Ashton-Tate, so watch this space.

Mae Basil yn twp

M Smith of Powys chastises me for advocating that you make line 1000 of your BASIC programs SAVE "PROG.BAS" or whatever, to make saving of your current listing automatic. Make it line 1, he says, and it's saved before it's run, insuring you against dump outs halfway through.

Basil Pigg

Update

Mini Office 2 (complete with Spell Checker and Thesaurus) and Micro Design (new desktop publishing package rumoured to be best yet) are still a couple of weeks away. The classic reason why software isn't out yet is that it's "two weeks away, awaiting documentation". It is amazing how this can take six months yet the manual is still lousy at the end. Still, it only took God six days to create the universe and look how many hundreds of years it took to produce the manual for that.

QL corner

QL macro assembler

Sinclair commissioned quite a lot of software for the QL which is now being sold off quite cheaply by one or two suppliers.

If you are interested in programming the QL in assembly language, I can recommend the *QL Macro Assembler*. This was produced by GST (which wrote the word processor that used to be bundled with the Atari ST), and is in my opinion the best assembler for the QL. This assembler has extremely powerful macro facilities (you could use them to write your own cross-assembler for a different processor) and is supplied with the Metamco text editor, and the standard *QL Linker*, also written by GST.

QL Macro Assembler costs £19.95 and is available from **EEC Ltd, 18-21 Misbourne House, Chiltern Hill, Chalfont St Peter, Bucks SL9 9UE.**

Anyone for Fractals?

QL users, and anyone else, interested in fractals, the Mandlebrot set and similar ways of using vast amounts of computer time to generate pretty pictures, ought to subscribe to *Fractal Report*. John de Rivas, the editor, has a QL, and at least one of the articles in the inaugural issue was written by a QL user, so there should be plenty of QL-related articles in subsequent issues. The subscription is £10 for six issues, from **Reeves Telecommunications Laboratories Ltd, West Towan House, Porthtowan, Cornwall TR4 8AX.**

SuperBASIC tip

If you are new to the QL and are writing programs in *SuperBASIC*, you can make your programs much easier to follow if you use a single colon on a line to separate sub-programs (procedures and functions) from one another.

QL Teletext adaptor

Micro Projects Ltd, which manufactures a Teletext adaptor with an RS232 interface, is thinking of developing a QL software package so that QL users can get the most out of it. If you are interested, give the company a ring on 0270 875178.

John Torofex

Networking

If you have tried to network two or more QLs together, you probably found that you couldn't get it to work properly due to bugs in the original software.

Tony Tebby's SuperToolkit II, available for £23 from Care Electronics, lets you network up to 64 (!) QLs together, reliably. You also get lots of other goodies into the bargain – full-screen editor, job control, key define etc.

Care is at 800 St Albans Road, Garston, Watford WD2 6NL.

By the way, if you want a cheap print buffer, buy a second QL, network it to your existing machine (you need the toolkit), and use it to drive the printer.

The Instant Catalog

ALL TITLES IN STOCK

SPECTRUM	CASS
4 Soccer Simulators	6.45
After Burner	6.45
Barbarian II	6.45
Bard's Tale	6.50
Batman - Caped Crusader	5.95
Command Performance	9.99
Cybernoid II	5.50
Exploding Fist Plus	5.25
Fists "N" Throttles	8.75
Football Manager II	5.75
Frank Bruno's Big Box	8.75
Game Over II	6.50
Game Set and Match 2	8.75
Giants	9.99
Gold Silver Bronze	9.99
Heroes of the Lance	7.99
In Crowd - Compilation	8.75
Laser Squad	6.25
Last Ninja II	8.95
Leader Board Par 3	9.99
Mega Games Vol 1	9.95
Mickey Mouse	5.25
Operation Wolf	5.50
Pacmania	5.95
R-Type	6.45
Rambo III	5.95
Return of the Jedi	6.45
Road Blasters	5.99
Robocop	6.25
Savage	5.95
Spitting Image	6.45
Supreme Challenge	8.75
Taito Coin-op Hits	8.95
Techno Cop	5.50
Thunder Blade	6.50
Tiger Road	6.25
Total Eclipse	6.45
Ultimate - The Works	8.95

COMMODORE 64	CASS	DISK
4 Soccer Simulators	6.50	9.25
10 Great Games Vol 3	9.99	11.99
Afterburner	6.95	9.99
Armalyte	6.45	8.75
Barbarian II	6.45	8.75
Batman - Caped Crusader	6.45	9.45
Bombuzal	6.45	8.75
Caveman Ugh-Lympics	7.25	10.50
Command Performance	9.99	10.75
Crazy Cars	6.50	9.50
Cybernoid II	6.45	9.99
Double Dragon	6.50	9.99
Emlyn Hughes Int Soccer	6.45	8.75
Exploding Fist Plus	6.45	8.75
Fists 'N' Throttles	8.75	9.99
Football Manager II	6.45	9.99
Frank Bruno's Big Box	8.75	9.99
Game, Set and Match 2	8.75	11.99
Games: Summer Edition	9.99	11.99
Giants	9.99	11.99
Last Ninja 2	8.75	9.99
Leader Board Par 4	10.99	12.99
Mega Games Vol 1	9.99	10.99
Menace	6.75	12.95
Dragon Ninja	6.75	9.99
Microprose Micro Soccer	9.95	12.99
Operation Wolf	6.45	9.99
Pacmania	6.45	9.99
Rambo III	6.45	9.99
Robocop	6.45	9.99
R-Type	6.45	9.99
Sports World 88	9.99	10.99
Supreme Challenge	8.75	11.50
Taito Coin-op Hits	9.99	12.99
Thunder Blade	6.95	10.99
Tiger Road	6.95	10.99
Times of Lore	6.45	8.99
In Crowd - Compilation	9.99	11.99
Techno Cop	7.45	10.75

ATARI ST	DISK
5 Star Compilation	14.75
Action ST Compilation	11.99
After Burner	13.99
Batman	12.50
Bombuzal	14.75
Captain Fizz	9.99
Crazy Cars II	12.50
Double Dragon	11.99
Dungeon Master	14.75
Eliminator	13.99
Elite	14.75
Falcon	15.50
Flying Shark	14.75
Garfield	11.99
Heroes of Lance AD&D	17.25
Hostages	14.75
International Karate (IK+)	11.99
Joan of Arc	13.99
Leaderboard Birdie	13.99
Leisure Suit Larry II	21.50
Lombard RAC Rally	14.75
Manhattan Dealers	12.50
Mickey Mouse	13.99
Nebulus	13.99
Operation Wolf	11.99
Pacmania	11.99
Powerdrome	17.25
Purple Saturn Day	14.75
R-Type	17.25
Rambo III	11.99
SDI	13.99
STOS - Games Creator	19.49
Speedball	14.75
Spitting Image	11.99
Teenage Queen	11.50
Thunder Blade	13.99
Times of Lore	15.25
Triad Vol 1	17.49
Wanted	11.50

PLANET'S Best Buy EST. 1988

INSTANT, Boston House, Abbey Park Road, Leicester LE4 5AN
Mail Order Only. State Computer's make and model.
P&P: 50p on orders under £5. EEC 75p per title.
Whole World £1.50 per title for Air Mail.
New titles sent on the day of release.

0533 510102

FOR DISK PRICES & NEW RELEASES PLEASE RING US.

ATARI 520 ST-FM SUPER PACK WITH £450 WORTH OF SOFTWARE £369.99

ATARI 1040 ST-FM SUPER PACK £469.99

31/2"	40 CAPACITY STORAGE BOX	£4.95
51/4"	50 CAPACITY STORAGE BOX	£3.99

51/4" DSDD BULK IN LIBRARY CASE ..... £4.50 FOR 10

31/2" DSDD 1MB 135TPI BULK.....£8.50 FOR 10

3M 31/2" DSDD.....£10.99 FOR 10

SKC 31/2" DSDD .....£9.99 FOR 10

31/2" DISKS HEADCLEANING KIT.....£2.99

SPECIAL OFFER

We Accept EXPRESS VOUCHERS

40 CAP. 31/2" STORAGE BOX
25 31/2" DSDD 1MB DISK

£25.00

DEALERS! ! CALL US NOW FOR BEST PRICES.
ALL PRICES INCLUDE V.A.T. AND DELIVERY

Callers 091 516 0065
OR send cheque or P.O. with your order

Access Access

VAT REG: 486 0821 33
Branded and Unbranded
Disks at Competitive Prices

H.C.L.
HOBURNE CONSULTANTS LTD

TEL: (091) 516 0065
FAX: (091) 516 0065

10A SOUTHWICK INDUSTRIAL ESTATE, SOUTHWICK, SUNDERLAND SR5 3TX

SPECIALISTS IN THE SUPPLY AND INSTALLATION OF COMPUTER HARDWARE, SOFTWARE AND DATA SUPPLIES

BEEB BOX

CD goings on

Optical technology in the form of the CD ROM player looks set to dominate the latter part of this century. Massive storage capacity for data, images and sound will be the norm, along with the ability to make use of all that power.

The first optical application, however, was not a CD player, but the interactive videodisc. Pioneered by Acorn with the Domesday project, IV uses a BBC Master 128 to control and interact with the system. Most often used in the classroom, or in business, because of the expense, a IV system is still a revelation to use.

The latest disc, called *Opensoft*, is designed to help anybody create a presentation in next to no time. *Opensoft* uses a combination of still frames and video sequences, together with windowed images and captions to create a menu driven system. It is claimed to be "The simplest and most powerful presentation system available".

Acorn grows

Acorn's financial results are covered elsewhere, but I would just like to examine a couple of points in more detail. First, no dividend is being given on the net profit of 1.1 million. This means no money for the shareholders, and although a sensible measure, will not endear Acorn to the stock markets. Second, its overdraft has gone, replaced by cash reserves of 2.5m pounds. No longer beholden to the bank, Acorn should have plenty of money to spend on vital things such as R&D, or marketing. New machines are on the way, but some of the credit must go to the still buoyant market for the Master 128.

Andrew Brown

Jargonistical pseudospeak

Al Haig (bless his little cotton socks) was a master of them. Senior British civil servants are economical with them, and computer journalists throw them around like confetti. What am I talking about? Jargon, buzzwords, and euphemisms; the industry is full of them. For example what is the difference between an IEEE 488 and an HPIB? Answer, nothing at all. So I have decided to take an occasional look at some of these words, and see if I can demystify them. First, I would like to decode the near universal term ROM, standing for Read Only Memory. In BEEB terms however a ROM is very often an EPROM. An EPROM can be erased by ultraviolet light, and once erased can be reprogrammed, or 'burned' in. ROMs come in a large variety of sizes from 8k to 128k, and beyond. For example, all the software in the Master 128 resides in one chip, which then pretends to be four 16k ROMS. EEPROMs such as in the Master Compact, are the same as EPROMs except their contents can be altered using the electricity inside the computer alone.

MSX TRA

Link show

Although things are still in the early planning stages yet, MSX Link is planning an MSX show some time in October. The venue will possibly be somewhere in central Peterborough, thus making it easy to get to by train. More details when the venue and dates have been finalised.

Alternative attractions

So many items of news have come in this week regarding all aspects of MSX computing that I'll have to hold over some of the news until next week.

First item this week is the report from the Alternative Micro Show, which took place on the first of April at the Horticultural Hall in London. The MSX was to the fore, with no less than four MSX user groups being represented.

David Krawcyzyk of MSX Central was once again demonstrating the Philips 8280 Video Dedicated Computer, creating a large amount of interest in this machine. Even TV companies have shown an interest in this computer. Jeff Whiting of MSX Tech had a large stand, as did Vernon Wyland who runs the MSX Viewdata comms system. MSX Link did not have a large stand at the show, due to other commitments, but a representative was showing the flag and recruiting for them.

The show seemed to be quite a hit with MSX users, with sales of both software and hardware doing well. MSX Central sold a second-hand Toshiba disk drive for £199.00, and could have sold many more, even at this price, such is the demand. All in all, a successful showing. I can't wait for this show to become a two-day event.

Strong stuff

Gremlin has just released *Hercules, Slayer of the Damned* – a beat-'em-up much like *Wa y of the Tiger* in presentation, each section of the game requiring a separate load. Initial impressions are favourable, with reasonable graphics and good response. My full review will have to wait until I've fulfilled 'The First Labour'.

Gremlin's PR department has informed me that the company has no solid plans regarding releases for the MSX format, although it may release a couple of titles this year. Maybe it's spending all its time writing mega games like *Federation of Free Traders.*

Keith Neal

Operation Bug

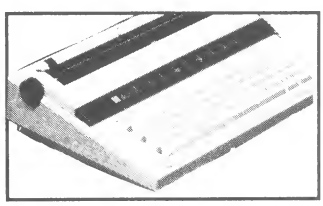
Regular readers will have read my enthusiastic review of Operation Wolf. It seems, though, that there is a problem with this game regarding its compatibility with all MSXs. David Krawcyzyk, of MSX Central, points out that this game fails to run on the Toshiba HX/10.

Unfortunate, considering that this is the most popular MSX in the UK. The problem did not become apparent to me, of course, as I use a JVC HC7 to test software.

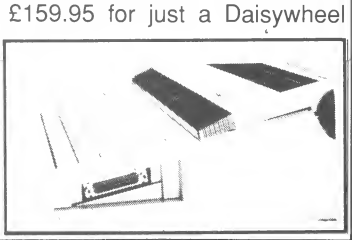
UK HOME COMPUTERS

UK HOME COMPUTERS
82, CHURCH WARD AVENUE,
SWINDON,WILTS. SN2 1NH
☎ 0793 695 034

DAISYWHEEL PRINTER/TYPEWRITER



Manufactured by JUKI, this typewriter doubles as a 10 cps. Daisy Wheel Printer. It has a standard Centronics Interface, and a varying printing pitch of 10, 12 & 15. It can handle paper up to 12" wide and has a keyboard buffer of 12 characters. The correction memory, in typewriter mode, is 20 characters. In either mode it can print a master and 3 copies. As a printer it has a 2k memory, and weighs in at only 6.8kg. Its overall size is 408 x 343 x 120.5 mm. You would expect over £159.95 for just a Daisywheel Printer of this calibre, and over £90.00 for a Daisywheel Printer Our Special Price is just £109.95 plus £6.05 Postage & Packing.

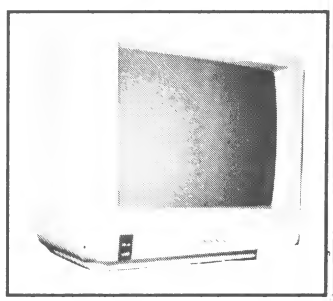


HURRY!
Stocks are very limited.

THOMSON COLOUR/MONO MONITORS

MONO
12" Amber/Green Composite Hi-Res £49.95
12" Amber/Green TTL Hi-Res £49.95
15' Amber TTL Hi-Res.....£59.95
15" Paper White TTL Hi-Res inc. Tilt & Swivel Base £89.95

COLOUR - (RGB/RGBI/COMPOSITE)
12" IBM Compat. 640 x 240 .31 dot £169.95
12" IBM/Commodore etc. 560 x 240.....£159.95
14" IBM Compat. 640 x 240 .38 dot £169.95
14" IBM/Commodore etc. 560 x 240.....£159.95
14" 40 col. text for IBM/ATARI Texas etc.....£149.95



BELOW HALF PRICE

Please include postage at £7.05 per Monitor
Send your order or for further details TODAY !

ALL GOODS SOLD SUBJECT TO OUR STANDARD TERMS AND CONDITIONS. AVAILABLE ON REQUEST

EXPRESS EXPRESS EXPRESS SAL

The 'CHIP' SHOP (Semicons) Ltd

(CHIPS GALORE ! ! ! SORRY, NO FISH!)
DRAMS-SRAMS-EPROMS-CPU-PIA-VIA-ULA-PALS etc etc
Plus full range of TTL inc CMOS L&S Series For example: UPGRADE YOUR 1512 TO 640K FOR AS LITTLE AS £12.60 V20/V30-8 £10.50-Z80A CPU £1.50-Z80B CPU £3.00 - WD1770 £10.50
We accept Access & Visa

Tel: 061 483 1989

6 Bean Leach Drive - Offerton - Stockport - Cheshire - SK2 5HZ
19p stamp for full list to Dept. CE/1 - (P&P 75p)

MID SUTHERLAND DATA

* PC SOFTWARE *
* PARROT DISKETTES *
PHONE NOW FOR DETAILS ! !
0862 3728

PRINTER RIBBON RE-INKING

Sample prices:	Ams. DMP2000..£2.00
PCW8000s.....£1.65	PCW9512 .....£1.90
Brother M1009..£1.65	Brother AX10 ....£2.20
Citizen 120D.....£1.65	Com're MPS803.£1.65
Epson LX/RX80..£1.65	Epson MX 100 ..£2.60
Image Writer £2.00	Star LC10.....£1.65

For other makes phone 08907 50965
Post used cassette(s) with payment to:
ALADDINK (Dept CE), Eyemouth, Berwickshire, TD14 5AP

MISSION IMPOSSIBLE BBS

Megabytes of files to download 24 hours a day
Resident professional systems engineer for tech queries
Latest US files available
Rip-off suppliers section
0602 - 654329

ATTENTION! AMIGA, ST, 64 OWNERS

SOFTWARE AT VERY LOW PRICES.
ROBOCOP TO ACCOUNTS PROGRAMS.
£1-£5. NOWHERE CHEAPER.
For Amiga & ST Software,
SEND £1 (Cheque/P.O./Cash) for Catalogue payable to C. Acorn.
Send to:
ELITE MICROS
7 Goulding Court, Clarendon Road, London, N8 0DB

NCL REPAIRS

Dept 14, 22a Bartleet Road, Washford, Redditch, Worcs. B98 0DG
0527-510409

REPAIRS TO ALL HOME MICROS !!

- Quote given before proceeding with repair if wished.
- Free software with every Commodore 16, 64, 128, +4, Amstrad 464, 664, 6128 * Spectrum repair.
- Guaranteed seven-day return if in the UK.
- Repair guaranteed for six months.
- P&P included in the price.
- Spectrum, Commodore, Amstrad, BBC £19.90 - £35.00 or quote given.
- Commodore Amiga & Atari ST machines will be quoted before we proceed.
- All cheques & P.O.'s to be made payable to N.C.L.

Access

And also ex-Rental software for sale. Prices from 50p

PC File Plus V2(3).....£5.00	
PC Calc Plus (3).....£5.00	
PC Type Plus (3) £5.00	
PC Type (3) £5.00	
N. York Word (3).....£5.00	
Freeway Acc Plus.....£5.00	
PC File db (3) £5.00	

2 or 3 disc sets
51/4" £5.00 31/2" £5.00
Ring for a price and special offers on the Schneider, Euro PC Range & Euro PC.

only £1.75

(per disc fully inc)	Quick Taste
PC Railroad	STD Codes
Galaxy 2.4	Pre-Calculus
Ford Car	3 x 5 dBase
Magic Menus	Optics
Scrabble	Fingerpaint
Formgen	Radio Ham
Painters Pal	Bible Quiz
Flow Charts	Deep Space
E2 Forms	Meal Mate
Fontastic	French Tutor

+ 100 MORE!

EURO PC

Softcell Services

10 51/4 Discs £16.00,
10 31/2 Discs £25.00
For further details write or phone for a FREE catalogue !
Dept NCE 9 Wells St
Cardiff CF1 8DW
Tel: Cardiff (0222) 222895 *anytime*

DEE JAY SUPPLIES

STAR LC 10 PRINTER RIBBONS
£2.99 each
5 for £14.50 10 for £27.50
Price Fully Inc of P&P
KEITH READER
50, Hawkshead Ave, Euxton, Chovely, Lancs, PR7 6NZ

PROFESSIONAL DIGITIZED AMIGA PICTURES.

Variety of modes, size no object. Interested?
Write:
S.L.H. DIGITIZING,
35 Cairo Ave, Peacehaven, East Sussex, BN10 7PX

ATARI ST PUBLIC DOMAIN

Alpha's Spring Catalogue now has hundreds of great programs including:

* Desktop Publishers	* Wordprocessors	* Educational
* Art & Design	* Databases	* Business
* Copiers Galore	* Spreadsheets	* Accessories

High Quality Public Domain on Branded Disks from £1.75.
Send a 19p stamp for FREE Catalogue or £1.20 for demo disk.
ALPHA COMPUTING. 32 Meadow Drive, Halifax, W. Yorks. HX3 5JZ

MATRIX SOFTWARE HIRE

THE CHEAPEST WAY TO PLAY THEM ALL
Top games titles for Spectrum, Commodore, Amstrad and Amiga, please state system.
S.A.E. for Details from:
Matrix Leisure Club
Dept N.C.E., 271 Stanstead Road, Bishops Stortford, Herts CM23 2BT

ALL COMPUTER HARDWARE/SOFTWARE WANTED FOR CASH OR EXCHANGE NOTHING REFUSED!!

01 727 0424

EURO ST/AMIGA

HIRE AND PLAY LATEST ST HITS FOR ONE WEEK!
Uk and Irish ST/AMIGA owners
Send your address
for more information to:
EURO ST, KINSELLA HOUSE, JOHNSTOWN, SEA ROAD, ARKLOW CO. WICKLOW, EIRE.

FREE !!! (1 per Household)
10 Wrap Around 3 1/2" Disk Labels
S.A.E. to: N.B.S. (Label Offer)
21, Priory Rd, Newport, Isle of Wight

PROGRAMMERS PUBLIC DOMAIN LIBRARY

EAZYTEXT budget desktop publisher suitable for any Atari ST med and high res. and all 9 pin and 24 pin dot matrix printers
ONLY £14.99 P&P incl. from ZZ SOFT
zzSoft
3, RIVERDALE HOUSE, MYTHOLM CLOSE, HEBDEN BRIDGE, W. YORKS. HX7 6BP
Run by a programmer for programmers!
0422 845528

PREMIUM SOFTWARE

24 STATION ROAD, BARTON HALSALL, NR. ORMSKIRK, LANCS , L39 7JN
TEL : 0704 841213

SPECIAL LIMITED OFFER (ONLY A FEW LEFT)
AMSTRAD 1640 EGA + 32 Meg + Col.Monitor + STAR printer + 5 Meg SHAREWARE
ALL IN PRICE £ 1199 INC.

OTHER MAKES AVAILABLE (XT, AT, 286 & 386) FROM *£ 459*
SPECIAL OFFER ON PC2086 AMSTRAD (inc. LQ Printer + Lotus Symphony V2.0) FROM £1149 + VAT
HARDCARD WESTERN DIGITAL HI Q (INCLUDES 5 MEG SAREWARE)
20 MEG £224 32 MEG £245
42 MEG £285 54 MEG £499
CDROM DRIVES FROM *£499* VIDI PC DIGITISER *£119*
Multilingual wordprocessor from *£239*
Star NL10 printer + lead (*our best seller*) *£179*

5.25 " DISKS D/SD/D FROM .31p 3.5" D/SD/D FROM .89p
Wide Selections of Public Domain & Shareware programs from £1.25,
over 4,500 + disks (over 15,000 progs) to choose from. ASK FOR OUR FREE CATALOGUE.
ALL OUR PRICES ARE INCLUSIVE. What you see is what you pay .
No hidden charges. Prices and specifications subject to change without notification .
WE ARE AMSTRAD AND KYOCERA AUTHORISED DEALERS

AMSTRAD

DATA BUREAU PD+ CLUB

IBM DISKS AND ATARI ST DISKS

24 Hulman Road, Exmouth, Devon, EX8 3HS.
Telephone: 0395 266720

Send for details of our new P.D. Software range:-
Or join our Club at £7.00 per Annum. You receive regular newsletters. Library disks free utilities and features on programming computers and help with your problems.

Or you can just send a SAE for our catalogue:
Listing for disks. All disks are £1.50 - 5 1/4. £2.50 - 3 1/2. Cheaper if you are a Data Bureau member. Members can contribute to newsletter and send in progs. etc. to help each other.

RING OR WRITE NOW

Please make all cheques payable to T. Hammond
We also specialise in helping the small business set up with computer software.

DON'T DELAY JOIN TODAY.

UNBRANDED DISKS

TOP QUALITY, 100% GUARANTEED, WITH LABELS

10	3 1/2	DD DS	135 TPI	£8.99
20	3 1/2	DD DS	135 TPI	£17.50
30	3 1/2	DD DS	135 TPI	£25.50

Price includes P&P - Cheque + P.O. to:
Mr G.S. Bradley. 49 Churchill Ave., Wyton, Huntingdon, Cambs. PE17 2EG

TOP QUALITY DISKS Unbranded (Dyson)

31/2" DS DD 135 TPI £1.00 each
Orders Under £10 p+p £1.50

KOBRA ELECTRONICS
52, CHERRY ORCHARD
KIDDERMINSTER WORCS DW10 1SH

LES

COMPUTERWISE
BRIGHTON ☎ 674626
YOUR COMPUTER SPECIALIST
We Accept EXPRESS VOUCHERS

OPEN BANK HOLIDAY MONDAY 1ST MAY 10AM TO 6PM

COME AND SEE OUR LARGE RANGE OF SOFTWARE FOR ATARI ST, AMIGA, C64 SPECTRUM +2 / +3, AMSTRAD CPC, IBM PC, AND SEGA

COMMODORE C64 HOLLYWOOD PACK INCLUDES C64 COMPUTER, JOYSTICK, DATA RECORDER, AND 10 TOP GAMES ONLY £149.95

ATARI 520 STFM EXPLORER.....£299.00
ATARI 520 STFM SUPERPACK.....£399.00
ATARI 520 STFM + COLOUR MONITOR.....£649.00
ATARI 1020 STFM WITH SOFTWARE.....£499.00

AMIGA A500 (10 STAR PACK)
Includes TV Modulator 512K Ram-Internal 1mb D/Drive, mouse, manuals and 10 games
ONLY £399.00

GET A FREE HOLIDAY IN FLORIDA WHEN YOU BUY A COMMODORE PC 10/III OR LARGER FROM US. CALL IN FOR FULL DETAILS

100'S OF SOFTWARE TITLES IN STOCK AT ALL TIMES

A LARGE SELECTION OF HARDWARE, SOFTWARE AND PERIPHERALS, FOR MOST COMPUTERS. SOFTWARE AND HARDWARE ON PERMANENT DISPLAY. YOU ARE WELCOME TO TRY BEFORE YOU BUY

OPEN 10am to 6pm Mon - Sat
44 GEORGE STREET,BRIGHTON

THE DISK EXCHANGE
AMIGA, ATARI ST
Exchange your unwanted software
Free membership
Please send SAE to Disk Exchange
46 Holford Avenue, Warrington, Cheshire
☎ 0925 59330

SOFTMACHINE DISTRIBUTION LTD
FOR OEMs/TRADE

★ EPROM WRITER
★ PC HAND TOOLS
★ COMPUTER CASES
★ MAIN BOARDS
★ EPROM ERASER
★ CPU STANDS
★ POWER SUPPLY
★ MONITORS

TRADE HOURS: 10am-6pm
TEL: 01 807 7644. FAX: 01 807 2748
SOFTMACHINE DISTRIBUTION LTD.
UNITS F18/F25 HARBET RD, LEA VALLEY,
EDMONTON, LONDON N18 3LR. ENGLAND
Tlx 9312100158 – TDG

WANTED

THIS SPACE ATTRACTS ATTENTION ! FOR JUST £14
CALL SARAH KING TO RESERVE YOUR SPACE NOW!! ON 0225 446034

WANTED

An Arabian Exporting Company will pay top cash, I repeat TOP CASH, for any computers, photocopiers, telephone systems or any other business machine on behalf of their eager buyer in the Middle East. Unlimited cash available for immediate decision. Please phone
01 360 8095
01 360 3305 or FAX 01 3603757

CPC centre

Club call

David Gosling has asked me to mention the *Solent Amstrad Club*, which has been going for over three years now.

Meetings are held at 8pm on the fourth Sunday of every month at the *Trojans Club*, off **Stoneham Lane, Eastleigh, Hampshire.** Just turn up and you'll be greeted with open arms – or you could always give David a ring on (0703) 462436.

3D-Fraktale auf dem CPC

There's a 3D fractal generator not long released in Germany. (Don't ask how I find these things out, just put it down to my extensive contacts throughout the computer industry. Ahem.)

It's not cheap – 59 Deutschmarks on cassette and 69DM on disk – but the results I've seen are pretty impressive. More info from **DMV-Verlag, Postfach 250, D-3440 Eschwege**, or telephone (0 56 51) 80 09-0.

Personal organiser, organiser

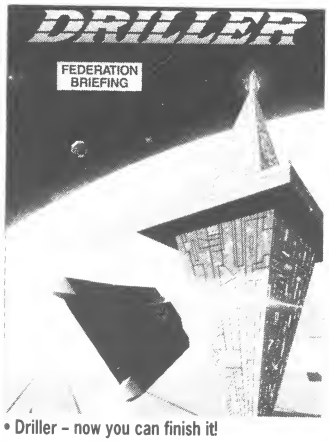
Steve Denson tells me he has a new compilation available. SD Microsystems has been for some time one of the principal producers of the kind of small business software which is so plentiful on PCs but fairly rare on CPC. *The Home Executive* (rotten title, that) is really a collection of household or personal management modules, linked by a master menu system.

"A special feature," says Steve, "is that the programs print information on organiser stationery as well as standard A4 or computer listing sheets." Aimed, I'd guess, at the serious home user it should also appeal to small organisations such as clubs or businesses. It includes an accounts ledger, a card filer, shopping selector (a what?), mini-calculator and various desktop utilities.

The *Home Executive* is £9.95 including p&p from **SD Microsystems, PO box 24, Hitchin, Herts, UK.**

Driller thriller

One of the best games ever released, was Incentive's *Driller*. But I never succeeded in tapping more than about a third or a quarter of the sectors. Until, that is, I used this reference list of all the co-ordinates.



• Driller – now you can finish it!

Sector	X	Y
Alabaster	4496	4096
Amethyst	6400	6050
Aquamarine	5120	2896
Basalt	0930	2240
Beryl	7104	3512
Diamond	4096	3472
Emerald	3746	4096
Graphite	1680	6336
Lapis Lazuli	4096	3746
Malachite	5952	5026
Niccolite	0512	1698
Obsidian	6656	6306
Ochre	1808	6720
Opal	7394	7744
Quartz	2768	1792
Ruby	3746	2550
Topaz	3077	1310
Trachyte	4496	6912

(If like me you're a Freescape/Incentive fan you may appreciate the *Incentive Collection* in next month's *Amstrad Action*, which has five pages packed with maps, cheats, pokes and playing hints for *Driller*, *Dark Side* and *Total Eclipse*.)

Incidentally, there's apparently a new release in the Freescape series coming. I'm under strict orders not to say any more, but as soon as I'm given the all clear I'll fill you in (groan).

Go for broke

Brian Barton of Goldmark Systems has been telling me about a new product he has coming out that is bound to stir up some controversy. "It's the very first utility to transfer Go! loaders to disk," he says. "Previously they said it couldn't be done, but we've just developed a fully automatic program to do just that."

The utility saves massively on memory, too. Unfortunately it only works on the 6128. Goldtrans costs £15 from Goldmark (07072 71529).

The controversy comes about, as always with these devices, because of accusations that it aids piracy. No doubt US Gold will be displeased that a utility is now on sale that enables owners of *Heroes of the Lance*, for example, to save to disk. Barton says that he is completely opposed to piracy, and points out that when he copies tapes to disk he insists on keeping the tapes sent in. "I throw them out," he says: "and make sure the dustbinmen take them. They think I'm crazy, and perhaps I am – but that's the way it is."

He points out that the price differential between tape and disk versions of a game is very often £5 – far more than the difference in price between the two media, even for the end user. "In fact the cheapo disks used can be picked up in bulk for about £1 each," he says: "so why on earth should the poor old games player pay over the odds just because he doesn't want to spend the rest of his life waiting for tape to load?"

While it's difficult to take exception to that part of Barton's argument it will be interesting to see how US Gold and others react. Any thoughts?

Steve Carey

Gauntlet

Did you know you don't have to die in Gauntlet? It's quite simple to avoid it, as well. Start playing with one player and when he is nearing death press the magic button to create a second player. When the first player dies you can carry on with the second until he is close to death, at which point you simply reactivate the first player. Then you carry on alternating between characters, and consequently between joystick and keyboard control, for as long as you like.

The same cheat even works in two-player mode. Watch out, though, that you don't both get killed simultaneously or the game ends.

ENIGMA VARIATIONS

REQUIRES
PROGRAMMERS and GRAPHICS ARTISTS
Z80, 8086(8) and 68000

We are looking for talented Z80 games programmers and Graphics Artists to join us in our Harrogate office.
We are a new software company who are concentrating on licensed product. You will be working on industry standard development systems and will have the backup of top graphics artists and musicians. The working atmosphere is relaxed but we would expect dedication from a successful applicant.
If you feel that you could fit in with our team we would be delighted to hear from you especially if you can show us demos of previously published games although keen newcomers would also be considered.

Phone Richard or Mark on 0423 523884
or write in confidence to
15 UNITY GROVE, HARROGATE, NORTH YORKSHIRE HG1 2AQ

Tiertex

TIERTEX Ltd
10A Barlow Moor Road,
Didsbury
MANCHESTER M20 0TR

Due to major expansion, one of the U.K.'s most experienced development houses requires the following individuals to complement its current in-house team.

EXPERIENCED
C-64 16 BIT
ARTISTS

The above positions are full time and based at our new Manchester offices. Renumeration is dependant on experience and a comprehensive bonus scheme will also be included.

The successful applicants would be working on the creme of Coin-Op conversions and exciting original projects for Europe's top software publishers.

If you think your work measures up to our past projects like Thunder Blade, Last Duel and 720°, please send examples of your work together with a C.V. to the above address.

Alternatively, phone Andrew Ingram on 061 446 2251 to discuss these opportunities further, all applications will be dealt with in the strictest confidence

TECH TIPS

HELP!
Noisy parker

I have just upgraded to a 1040STF from a 520STM and I think I may have a small problem with the disk drive.

● Is your ST making funny noises?

It's very noisy in operation in comparison to my external 1Mb and my old SF354 half meg drives.

I know drives vary in operational specifications, but should it make any noise? It is very loud!

Apart from the noise, it appears to work fine.

C Parker, Pill, Bristol

• As long as the drive is working correctly, don't worry about it. As you said in your letter, Atari has used drives from several sources and they vary in operation.

If you have any problems, take the machine back to the retailer for exchange or repair.

HELP!
Trouble communicating

I have recently purchased a second hand modem made by D A COM Sytems DSL 2123AD.

My problem is I have no information of any kind and as the modem is entirely software controlled I can not afford to experiment. If possible, could you or any reader supply the address or telephone number of the manufacturer, or any useful information which may help.

My 'phone number for any warm-hearted, kind, computer idiot who may be able to help is 091 5485586.

I'm using BBC computer *Comstar II* software.

E. Davis (no address supplied)

• I'm afraid I've been unable to locate the address of the manufacturer, but if any of our readers can help this guy, please write to me – or telephone him – with the information.

HELP!
Security file

I have a problem with a piece of software for my recently purchased Commodore 64. I am a security manager for a large textile firm. I have used a file system to relate vehicles to staff, enabling me to identify staff details in relation to their motor vehicles.

The file system I use is a simple one incorporated in an educational package called "Go Micro".

Although it is a simple file, it is ideal for my needs. However, after spending many hours typing the details, I find it will not load after being saved.

The program can be listed but not knowing a thing about programming, I cannot find the fault.

My cassette player is not at fault as it loads the sample file OK.

If any of your readers have this program and it works, could they please let me have the correct listing, so that I can check my listing.

I have spoken to the publishers, but the programmers responsible have ceased trading.

Michael Weavers, Colwick, Nottingham

• Well Mike, either your explanation of the file program is a little askew or you're labouring under a misaprehension. If you're typing data into a filing program then merely loading back the program into the computer, it does not load back the data.

There should be an option within the filing program to write your data file to tape and read a data file back from tape.

You appear to be loading up your database program, tapping in the data, saving the program, then expecting to load back the data with the program – databases do not work in this way.

Save your DATA file, then quit the program. When you come to use the database again, load up the program, load the data file – et voila!

HELP!
C64 machine code

I have been struggling with machine code on the C64 but I cannot seem to understand it.

I have been looking for a good book to explain it step by step and have been recommended one in the Dr. Watson series.

Unfortunately, I cannot get hold of it therefore I would be grateful if you could recommend one.

Colin Fulton, Ayr, Scotland

• Give Sybex a call on 0279 26721. It publishes a range of programming books and at least one 6502 machine code tutor.

TIP
What's up Doc?

Re. the letter from Doc. Coshe (*Express* 'ish 22) concerning the failure of his print head cable.

I don't know the KXP-1081, but assume that the system is similar to that used in many printers i.e. a flexible strip with etched or printed tracks.

Having examined an Epson MX-80 print head, I discovered that the cable is soldered to the print head, so obviously the cable can withstand the heat of soldering.

If only a couple of tracks are damaged, it should be possible to correct the problem with a couple of blobs of solder, or short pieces of wire. The latter would probably work for even a completely snapped cable, especially if reinforced with adhesive tape.

Alternatively, it may be possible to scratch off any protective layers and repair the defective track with conductive paint, which is available from many electronics shops.

Either way, it's certainly a lot cheaper than a new print head or printer and if the printer doesn't work now, then the problem can't get any worse.

S M Walker, Flixton, Gt. Manchester

HELP!
Needs a New Brain

I am writing to ask you if you could help me on a few points.

1. If you know of a good introductory book to computer architecture.

2. A good Pascal book and program for the Spectrum +.

3. If you know of anywhere I can get a cheap but powerful Sord M5 or NewBrain supercomputer (*Excuse me, I'm due back on the planet Earth – Tech Ed*) and software of course.

Thank you for your help and advice.

● HiSoft do an excellent implementation of Pascal

A Thompson, Rawcliffe, York

• 1. One of the best introductory texts to computer architecture is *Structured Computer Organisation* by Andrew Tanenbaum and published by Prentice Hall.

2. Hisoft supplies some of the best compilers around. You can contact it on 0525 718181. For a jolly good text book detailing Pascal buy *Introduction to Pascal and Structured Design* by Nell Dale and David Orshalick, published by D. C. Heath.

3. Hey, you're putting me on, right? The Sord and the NewBrain? No, but I do have a book on train spotting that I could let you have...

HELP!
Not big enough

When recently purchasing a Sinclair PC200, I was assured that it could be easily expanded to 640K on the main board.

Enquiring about this, different dealers give me different stories.

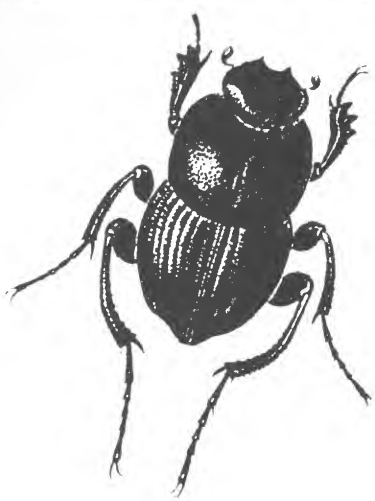
None of them really seem to know anything about it. Amstrad, after refusing to tell me, says that the expansion for PPC 512 will do the trick. However, the same man told me the RAM chips had 27 pins. I can't honestly say I've seen these before – perhaps they're triangular!

How can I do this upgrade and who will sell me the chips or do the job

BUG OF THE WEEK

This may not be a new one, but on *Elite* (ST version 1.01) if the retro rockets are fired immediately after leaving the space station, your ship is hurled back straight through the space station, without even a scratch.

R M Johnson, Tamworth, Staffs



Sisyphus schaefferi • The single central European species of sisyphus may be recognised by its thin coating of dung. It makes balls principally out of sheep excrement, which it rolls away and secretes in the outlet nozzles of interplanetary spacegoing vessels

for me? Is there a technical reference guide available with circuit diagrams etc. ?
Nigel Wilcox, Coventry
• Uncle Techtip isn't doing very well this week I'm afraid, kids. None of the suppliers I've called market a RAM upgrade for the Sinclair PC2000 range.

We tried calling the Amstrad technical help line and was rewarded with 14 minutes of continuous ringing then a 'dead-line' tone. Presumably, Amstrad has no-one with the necessary technical ability to answer its help line.

If any devotee of techtips can help then call your favourite Uncle and I'll pass on the information.

● Memory expansion for the PC200? Don't ask Amstrad!

HELP!
Ditto disks

I have recently bought an Atari 1040ST and I wish to use my Poly's 5.25" IBM software i.e. *Turbo Pascal*.

As I understand it I would need a 5.25" external disk drive and an emulator. Could you please advise me on the reasonable if not the best choice.

Umair Malik, London
• First of all Umair, may I remind you that the licensing agreement for the software you wish to use will probably be for one user only – it will almost certainly *not* include a clause allowing you to make copies of the software for use at home.

Wow! I sounded almost serious that time. OK. The emulator you need is *PC-Ditto* available from Power Computing for around £65.

It helps if you have a 5.25" drive, although a lot of PC software is now being made available on the 3.5" standard. If you do want to buy a drive, then contact Cumana on 0483 503121, they supply 5.25" drives to connect to your ST making it fully compatible with all PC software.

HELP!
Is this NORMal?

Yes, it's *me* again! This time I need help (*You said it – Tech Ed*).

I've got a Philips E1201 colour TV/monitor and have connected to my ST it via the euroconnector on the back of the monitor. Using this I have three problems.

1. The picture is slightly distorted at the left and right edges.

2. The desktop is very bright – so is everything else.

3. My TV has a facility to detect a computer and automatically go into monitor mode. How do I wire up the ST to this?

Norm Tierney, London
• Problems 1 and 2 are probably due to too much contrast over the picture display. I would suggest that you determine which of the resisitors in the plug controls luminosity and change it for one of (slightly) increased resistance.

I'm afraid that without further information on the Philips monitor (...this is *not* an open invitation to write again Norm) I can't help with problem 3 – although if you have the computer correctly connected to the monitor the facility should work automatically (that's the point!).

HELP!
Dump question

I own a Commodore A500 with which I am having problems programming, and hopefully you can advise on the solution. The problem is that I want to get a copy of what is on the screen and dump it to the printer (120D). Whereas on the Spectrum you could obtain the desired results with an LPRINT:COPY, the Amiga does appear to be somewhat more complex. The reason that I ask is that I would like to able when programming to get a copy of the output shown on the monitor.

If you are able to help, I would be most grateful.

R L Holton, Swanscombe, Kent
• Why re-invent the wheel? Rummage through any of the lists provided by suppliers of PD software. They will contain *lots* of utilities to allow you to do screen dumps.

HELP!
Psion comms link

I have recently bought an Amiga and one of the things I would like to do is to connect it to my Psion organiser XP via the comms link.

I have checked and connecting the comms link to the serial port of the Amiga is not a problem, however, the software supplied is on PC disk.

With this in mind can you suggest a way in which I might achieve my aim?
Andrew Ward, North Walsham, Norfolk
• Try one of the many comms programs available for the Amiga from the public domain, which should allow your Amiga to transfer data between the two machines. Select a suitable baud rate, set one machine to transmit and the other to receive and it should work. Failing that, call Psion on 01 723 9408, who may be able to help – if you ask nicely.

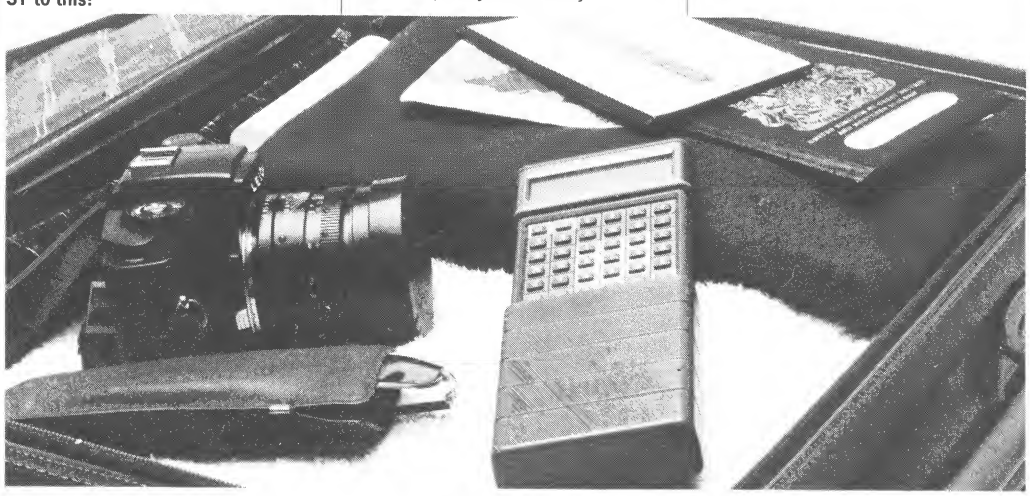
TIP OF THE WEEK
An astonishing SPECtacle

Recently, you published a letter bemoaning the poor sound quality of my Spectrum +3. Rather than rummage about in the machine's innards, I discovered that the distortion is only present via the TV lead.

To overcome this, I now take the output from the load/save socket by connecting the save plug of my +3 to an external amplifier (I use an electric guitar practice amp).

This restores perfect sound and gives me the added bonus of allowing the use of conventional headphones.

I realise that this may have been stating the obvious, but I'm willing to bet that many Spectrum owners have not tried this (*knowing Spectrum owners, I'm willing to bet it too – Tech Ed*) and hence are missing out on the full sound potential of the machine.
Grant Punchard, Aldershot, Hants



● Psion to Amiga: is it possible?

Win a sub!

We want to hear your problems, but we also want helpful hints and tips. And reports of those bugs you've found, from the comical to the downright frustrating. You could scoop the weekly best-tip prize of a brilliant piece of software for your machine, or even a free 26-issue subscription!

And remember, there's no waiting around for monthly publication dates. The best tips, and solutions to your problems will be in print before you can say Alan Sugar. (Please don't send SAEs for replies, we can only answer enquiries in print).

So whether it's help offered or needed, write to: Tech Tips, New Computer Express, 4 Queen Street, Bath, Avon BA1 1EJ.

TIP
Drive switch

I had a telephone call from Stuart Burns, who gave me the address of a company which markets an ST drive switch.

Apparently, the device allows connection of up to three drives and you can switch between any of them. The company is **Club 68000 LTD, Suite 1, Wickham House, 2 Upper Teddington Road, Kingston, Surrey KT1 4DD**. Tel 01 977 9596 and the device costs £49.95 – expensive!

TIP
PCW downgrade

I read with growing amazement that no Amstrad PCW owners have been informed on how to convert their machines into ones as good as PCs.

It takes very little time – and no hard earned cash – to scratch off the 'W'. This opens up a whole new software market for them...
Derek Freeman, Woodmancote, Emsworth

Evesham Micros

We Accept Express Vouchers

All prices include VAT and Delivery

ATARI 520STFM SUPER PACK

Includes STFM with 1MEG drive, 21 games with business software (worth over £450) & joystick.

Only £329.00

520 STFM latest version with 1MEG drive fitted	£269.00
1040 STFM including TV modulator	£399.00
1040 STFM model as above, with 'Microsoft Write' & 'VIP Professional'	£419.00
1040 STFM model as above, including 21 games, business software and joystick as supplied with above '520 STFM Super Pack'	£419.00
1040 STFM as above with super pack extras, with 'MS-Write' & 'VIP Pro'	£459.00
Buy any 1040 STFM model with a monochrome monitor for only £110.00 extra	
Mega ST1 with mono monitor, 'Microsoft Wite' and 'VIP Professional'	£599.00
Mega ST2 with mono monitor, 'Microsoft Write' and 'VIP Professional'	£849.00
Mega ST4 with mono monitor, 'Microsoft Write' and 'VIP Professional'	£1099.00
'Super Pack' Software, as supplied with above 520STFM offer	£60.00
SLM804 laser printer, great value at	£1099.00
SM124/5 mono monitor	£119.00
Mega-File 30Mb hard disk	£539.00
Mega ST2 package - includes Mega ST2, mono monitor, external 1Mb 3.5" drive, SLM804 laser, 'MS-Write', 'VIP Pro.', 'Fleet St Publisher' and 90 days on site maintenance	£1795.00
Atari DTP system - (Mega ST4/MM/SLM804/30MB HD/S'WARE)	£2795.00
System AT40 40MB Hard Disk, super bargain value at only	£469.00
5.25" External drive 40/80 track 360/720K formatted capacity	£159.95
Pye 1185 15" FST Teletext TV/Monitor inc.full remote control and cable	£269.00
Philips CM8833 colour monitor c/w ST or Amiga cable	£229.00
Philips CM8852 as above, higher resolution	£299.00

commodore hardware

NEW SPECIAL OFFER AMIGA PACK

Specially priced Amiga 500 package including the following:

- ★ Amiga 500 computer
- ★ TV Modulator
- ★ Mouse & Mouse mat
- ★ Joystick
- ★ Return of the Jedi
- ★ Eliminator
- ★ Zynaps
- ★ Custodian
- ★ Powerplay
- ★ Mercenary
- ★ Hellbent
- ★ Bubble Ghost
- ★ *plus* 5 disks of public domain s/ware

all for only £399.00

Amiga 500 computer including TV modulator	£359.00
Oceanic OC-118 64/128 disk drive for 64/128 with free GEOS software	£129.95
Freeze Machine complete backup cartridge, with integral reset button	£28.95
LC-10 commodore 64/128 ready printer inc. 2 extra black ribbons free	£199.00
LC-10 7-colour version of above printer inc. 2 extra black ribbons	£249.00

Amiga & ST 3.5" Drives

- ★ Very Quiet
- ★ Slimline Styling
- ★ Fully Compatible
- ★ Top quality Citizen drive mechanism
- ★ On/Off switch for Amiga
- ★ External plug-in PSU for ST
- ★ Throughport for Amiga
- ★ 1Mb unformatted capacity

Fully compatible, high quality 3.5" external drives for the ST and Amiga

Amiga version only £79.95

Atari ST version only £82.95

Prices include VAT & delivery

Western Digital Filecards

Upgrading your PC to hard disk? Look no further, we offer the best prices on top quality hardcards. Thorough documentation supplied, low power consumption, with free XTree file management software and Speedread. For Amstrad PC1512/1640 users we supply hardcards tested and formatted, with our simple software installation procedure. The best packages available!

20MB...£209.00 32MB...£229.00 40MB...£289.00

DISCTOR ST V5

for all Atari ST models only £28.95

New Version 5 disk utilities for the ST, features include: **protected software backup**, incorporating **turbo nibbler**, a *very fast and powerful* copier, which uses all available drives & memory and includes 80 parameter options for handling a greater range of software; **drive B boot** allowing many programs to startup from drive B; **organiser accessory** providing many major disk management commands; **special formatters** giving *up to 25% extra* user storage per 3.5" disk and accelerating access speed by *up to 30%*; **fast backup version 2** copies standard disks speedily; **ramdisk accessory**; **undelete file**; PLUS much,much more!

3.5" disks

10...£11.95 in plastic case £13.95
25...£27.95 in 40 cap case £34.95
Fully guaranteed double sided media

5.25" disks

25...£13.95 in 50 cap box £22.95
in 100 cap box £24.95
Fully guaranteed double sided media

Amstrad PC1512/1640/2086

We offer a wide choice of Amstrad PCs with many upgrade options, including the very latest PC2086 range. For the hard disk option, check our 'Evesham Upgraded Models'. Only the best will do - so we normally upgrade by means of a Western Digital Filecard, which includes XTree and SpeedRead software; however on single drive 1512/1640 models we can offer internal installations at the same price (leaving more expansion room but no upgrade opportunity for a 2nd floppy drive). On-site service contracts are available on any PC1512/1640 model for only £39.00 inc.VAT. Prices in lighter type exclude VAT.

Free with 1512 models... Ability and 4 US Gold Games

	SD	DD	AMS H.D.	DD 20MEG	DD 20MEG	SD 32MEG	DD 32MEG
				EVESHAM UPGRADED MODELS			
MONO 1512	384.35 **442.00**	477.39 **549.00**	N/A N/A	566.09 **651.00**	659.13 **758.00**	583.48 **671.00**	676.52 **778.00**
COLOUR 1512	494.78 **569.00**	555.65 **639.00**	N/A N/A	676.52 **778.00**	737.39 **848.00**	693.91 **798.00**	754.78 **868.00**
MONO 1640	474.78 **546.00**	555.65 **639.00**	738.26 **849.00**	656.52 **755.00**	737.39 **848.00**	673.91 **775.00**	754.78 **868.00**
CGA (COLOUR) 1640	581.74 **669.00**	651.30 **749.00**	825.22 **949.00**	763.48 **878.00**	833.04 **958.00**	780.87 **898.00**	850.43 **978.00**
EGA (ECD) 1640	677.39 **779.00**	738.26 **849.00**	938.26 **1079.00**	859.13 **988.00**	920.00 **1058.00**	876.52 **1008.00**	937.39 **1078.00**
2086 MONO	569.57 **655.00**	682.61 **785.00**	912.17 **1049.00**	751.30 **864.00**	864.35 **994.00**	768.70 **884.00**	881.74 **1014.00**
2086 CD	712.17 **819.00**	821.74 **945.00**	1051.30 **1209.00**	893.91 **1028.00**	1003.48 **1154.00**	911.30 **1048.00**	1020.87 **1174.00**
2086 12" HRCD	794.78 **914.00**	912.17 **1049.00**	1120.87 **1289.00**	976.52 **1123.00**	1093.91 **1258.00**	993.91 **1143.00**	1111.30 **1278.00**
2086 14" HRCD	886.09 **1019.00**	1007.83 **1159.00**	1233.91 **1419.00**	1067.83 **1228.00**	1189.57 **1368.00**	1085.22 **1248.00**	1206.96 **1388.00**

PC1512 special offer ..... Buy an Amstrad DMP3160 10" carriage 9pin printer with any PC1512 model for only £120.00 extra !

optional extras

1512 memory upgrade to 640K	£39.95	Enhancer 101 replacement keyboard	£74.95
Maths Co-processor 8087-2	£129.00	3.5" drive (720K) for SD models	£79.95
NEC V30 (8086 replacement)	£24.95	PC2000 series compatible 5.25" (360K) external drive	£100.00
Cipher CT1525 tape streamer	£319.00	Joystick & Controller Card self centering analog type	£34.95
Amstrad Modem Card V21/23	£99.00		
Amstrad MC2400 Modem Card	£199.00		

Amstrad PPCs

Low prices on all portable PCs - especially twin drive models
prices in brackets are excluding VAT

PPC512S ..... (£373.04) £429.00
PPC512D ..... (£433.91) £499.00
PPC640S ..... (£477.39) £549.00
PPC640D ..... (£546.96) £629.00

New low price *External* 3.5" floppy drive (720K) to suit *ANY* Amstrad 1512/1640 inc. DD and HD models! Uses no expansion slots £99.95

Central Point Software

For all your PC disk management requirements

PC Tools Deluxe Version 5... Other utililities may claim to 'do it all' but only PC Tools Deluxe is the complete disk utility package, providing a fast hard disk backup, the best undelete available, 100% safe formatting of floppy and hard disks, unformat, reliable disk caching, compress facility, in fact everything required to manage & protect your data at a sensible price.....**£49.95**

Copy II PC Version 5..... The most effective floppy disk backup utility of it's type. We always ship the latest version. Can also transfer many programs to hard disk and then run them without reference to floppy. Supports both 5.25" and 3.5" disk format. Don't be without it.....**£24.95**

Copy II Deluxe Option Board..... The ultimate solution to backing up copy-protected software using the hardware option. All the original features of the Option Board, including the most powerful backup copier product on the market, and can even transform any PC equipped with a 3.5" drive into a dual purpose IBM/Macintosh drive. Allows your PC to read and write to MAC data disks easily through DOS. Comes as an easy-to-fit short card.....**£84.95**

PRINTERS

All prices include VAT, delivery and cable

star

We use and recommend Star printers since they do offer an unbeatable combination of features, print quality, reliability and value. Make the sensible decision - get it right with a Star printer at our special, all in. prices.

Star LC10 best-selling 144/36cps printer, 4 NLQ fonts, inc.2 extra ribbons free	£199.00
Star LC10 7-colour version of above printer, inc.2 extra black ribbons	£249.00
Star LC24-10 feature-packed multifont 24 pin printer	£339.00
Star NB24-10 great value 24pin inc. cut sheet feeder + 2 extra ribbons	£499.00
Star NX-15 budget wide carriage printer	£329.00
Star NB24-15 wide carr.version of NB24-10 inc. cut sheet feeder	£649.00
NEC P2200 budget 24pin, great value 168/56 cps	£319.00
Amstrad DMP3160/3250DI good value 10" 9pin	£169.00
Panasonic KXP1081 reliable budget 10" printer 120/24 cps	£169.00
Panasonic KXP1180 super new 9pin with over 3400 typestyles, 11" carriage	£199.00
Panasonic KXP1124 great new sturdy 11" multifont 24pin printer	£319.00
Epson LX800 popular 10" 180/25 cps	£199.00
Epson LQ500 good 24pin printer 150/50 cps	£319.00
Citizen 120D good value 10" 120 cps	£139.00
Citizen HQP-45 wide carriage 24pin printer	£399.00

How to order

All prices VAT/delivery inclusive
Express courier delivery £5.00 extra

Send cheque, P.O. or ACCESS/VISA details
Phone with ACCESS/VISA details
Govt., educ. & PLC official orders welcome
All goods subject to availability E.&O.E.
Open to callers 6 days, 9.30-5.30
Telex: 333294 Fax: 0386 765354

Evesham Micros Ltd
63 Bridge Street
Evesham
Worcs WR11 4SF
Tel: 0386 765500

Also at: 1762 Pershore Rd., Cotteridge, Birmingham, B30 3BH Tel: 021 458 4564

EXPRESS Classifieds

WATFORD AMIGA user group meet third Wednesday of the month St Thomas Church Hall, Langley Road, Watford. Details phone 0923 50161

DESIGNER MODEM with lead only £85, Rubyview Communications software (Amiga) only £65, both under three months old, Shamzad 4pm – 9pm 01-570-3564

PROFESSIONAL ADVENTURE writer for any Spectrum £12, also Rotronics Wafadrive £20 for 48K Spectrum Tel 091-523-6386 Ask for Nick

ST FINAL word £60, Staccounts £60, UMS £10, Outrun £8, Tricks Tips book £8, Gem ST £8 Essex (0268) 417775

ATARI 520ST: Under guarantee: over £1,000 of boxed software, worth £1,500: sell for £475 ono: phone Warren 01 393 3722 (24hr)

CBM 1541 disk drive £85. CBM MPS 803 printer £65. Both excellent condition. Phone 051 632 2785 (Wirral)

SINCLAIR SPECTRUM +3 owners. Tasword +3 word processor brand new, unused. Cost £19.90, will accept £16.50 0226 752022

FOR SALE: Amiga software – Falcon, TV Sports Football, Balance of Power, etc. All originals £15 each. 01-675-6419 (Iain) evenings

NEW FANZINE, 'Micro Monthly' out now, 75p. Send your money (and SAE) to 7 Acorn Close, Sandiway, Northwich, Cheshire, CW8 2NX

C64 GUNSHIP, Mini Office 2, disk notcher, disk box, utilities, blank disks, magazines £20? Will haggle/swap for ST software (01) 485 0458

WANTED PRO12 must be cheap. (1040 bundled version will do) cash paid please phone 0268 778732

SPECTRUM UTILITIES, programming, graphics, useful homegrown software on disciple/+D, opus, microdrive, cassette. £2 your first 'outlet!'. R Cavers, 605 Loughborough Road, Leicester

DR T's KC51.6 for the Amiga £185. Excellent sequencer! Yamaha DX21 M101 synth £250 contact Cylde 01-691-8227

SHARP MZ700 plotter, spare pens, paper, plotter – software £50 also cheap original software and books. Tel: 0532 498985

WANTED: COMPUTERS. Willing to pay up to £20 write to: Robert Frosdick, 1 Northolme Close, Grays, Essex, RM16 2NX with details.

ACORN ELECTRON, plus 1, plus 3, 3.5" disk drive, data recorder, view, viewsheet etc. Tapes and disks £120 Tel: (03526) 3696 evenings.

FOR SALE Atari XL disk drive, datacorder, joystick, games. Offers over £25 considered for quick sale 01 878 1783 (eves)

CAN'T COMPLETE a game? Write now to: – Game Busters, 9 Emerald Close, Waterlooville, Hants. PO7 8NZ Please enclose a SAE for details. It's cheap and the best.

FOOTBALL EXTRAVAGANZA, Atari ST originals, Football Director II, Tracksuit Manager, International Soccer, £20 the lot. Phone Rotherham 370149 after 6pm

C128 SOFTWARE: Basic 8, Beginner's Guide, Tricks andTips £45. C128 helper £16. Prog. Ref. guide £16. Turbo – ROM £15 (0637) 876728

WANTED – COPY of manual for 48K Spectrum. Must be in good condition. Contact Simon Daniels on (0327) 843249 after 4.30pm

AMSTRAD PCW9512 complete with software and daisywheel printer. Also Amstrad 464 and monitor, loadsa games, mags, manuals £175 Tel (0942) 215863

FOR SALE, Commodore 64, cassette, disk drive, printer, loads of software, bargain at £295. Ring 01-595-7461 after 5pm

AMSTRAD 6128 with TV modulator £200 worth software tape recorder joysticks, still under warranty will accept £250 ono phone 0506 30947

MSDOS DICTIONARY program in compiled QuickBASIC enter Dosword from screen index to see syntax displayed. 5.25" disk £7.50 3.5" £9.00 J Davies, Radnage 5108

AMSTRAD CPC 464, original software for sale. Large SAE for list. Philip Howard, 82 Westwood Road, Greenham, Newbury, Berks, RG14 7TL

TORCH CFM240 colour monitor double disk drive. Epson MX80FT!I printer Wordstar Disk paper disks recently serviced. Phone 0733 233078 Price £250 ono

COMPACT DISK player £50. FX80 printer needs repair £50. BBC software 50p. Tel 0325 316009

AMIGA AND C64 user wants to swap the very latest demos on disk only. No disk = no reply! 0535 53669

COMMODORE MODEM for Micronet, complete with box and full instructions. Brand new. £30 ono. Ring 0482 836884 ask for Mike.

ATARI 1040STFM computer, mono monitor, Epson LX-800 printer, software accessories. Hardly used. £635. Tel: 01-748-7012

ST GAMES for sale. Outrun, Bombuzal, Sorcery+, Elite, Gauntlet 2. All for £40. Douglas Ramshaw, 24 Falconers Field, Harpenden, Herts, AL5 3ES

SINCLAIR SPECTRUM +3 latest software Multiface 3 utility with manual and box. Lots of mags. No offers £200. Tel: Bristol 829357

COMMODORE 1581 3.5" disk drive suitable for C64 or C128 £100. Tel 061-624-7199

FOR SALE: Snapshot 2. Hardly used £15. Tel: Stoke-on-Trent 774600

WANTED:- ST contacts, possibly with modem. Contact Darryl, 17 Millpond Street, Ross-on-Wye, HFDS, HR9 7AP

ATARI ST original games all boxed and as new, top titles, 16 available, £65 the lot, may split, Broadstone 691306

SPECTRUM +3 128K, built in disk drive, mags, tape to disk utility many accessories, games, superb condition £175 Tel. (091) 2745761

ATARI ST PD for 31.73! Send an SAE for a free catalogue to: 2, Old Mill Close, Market Weighton, York, YO4 3DU. Tel (0430) 872395

OKI 83A wide carriage D/M printer. Extra ribbon £50 inc P+P COD 0862-3728 65 Burgage Drive, Tain, Ross-shire IV19 1DW

WILL SWAP MZ80K computer + manuals tapes etc, for means to upgrade Atari 520STFM to 1 meg either cash or materials. 052-60308

A500 1MONTH old, under guarantee, with diskbox, disks, mouse mat, joystick 10 games and mags. Selling for £325 (0227) 67312 (Nick)

WANTED MODEM plus software (PD or commercial), also TV modulator for Atari 1040ST. Tel 0983 407230

C64/128 SOFTWARE all original, disk and cassette, no rubbish, war games, adventures, all sorts, not just games. Ring 0268 696638 for list.

ATARI ST. Swap my half meg of RAM for your D/S disk drive. Ring Doncaster 39065

FOR SALE: Sega system, 4 games boxed £70 phone 0450 87479 Mon-Thur after 7pm

3.5" AMSTRAD disk drive lead interface for CPC 464 £60 swap for printer and interface for 128 Spectrum +2

THE ARCHON collection for Amiga: Archon 1 and Adept (Archon II) £15. For Commodore 64: Project Stealth Fighter £8 contact: Angelo 0923 36571

WANTED: COURSE -winner V3 for Atari 520STFM. Original, good condition only. G Baker, 7 Southwick Place, Bilston, West Mids, WV14 6QZ

WANTED: AMSTRAD 6128 firmware manual. Phone 01-529-2073 and state your price.

ARKHAM OPUS 01-952-5128. All speeds. 24hrs. Files for ST, PC. Message areas for ST, PC, Shades, Psychology and more. 01-952-4493

QUAD-SPEED MNP5 modem 'HT.EC2400' error correction data compression Hayes compatible many features (non Babt approved) bargain information ring Hi-Tec 0733-52440

PRINTER, JP101 Olivetti, Dot Matrix, 50cps, Centronics, suit BBC Electron, superb condition, will post £65. 38 Bolan Square, Lockgelly, Fife KY5 9NF

VIDEO GAMES freak seeks Phillips or Vectrex games system. Also games cartridges for Coleco, Sgga, Atari intellivision, Tel 08677 2298

FOR SALE. Amiga originals Barbarian (Palace), Deluxe Paint and Music Studio. Offers please phone 021-526-5946 Ask for Rob

BBC B with disk drive, magazines, books, original software, Aries Shadow RAM and ROM boards. £600 ono. Phone (091) 5865072

Classified information

Want to sell your hardware or original software?

Upgraded recently and no longer need some products?

Want to publicise your user group?

Need to promote your bulletin board?

Then *New Computer Express* classified ads section is simply the best place.

The charge is £5 per entry, up to a maximum of 20 words. Payment can be by postal order or cheques made payable to Future Publishing Ltd.

Send off the form today and your ad will appear in the next available issue of *New Computer Express*.

Express 23 Classifieds form

Name .....

Address .....

.....

.....**Tel** .....

One space equals one word. All adverts must be no longer than 20 words.

Please note:

1 All entries should be accompanied by £5 payment

2 *New Computer Express* will not accept responsibility for any minor typographical errors which do not materially affect the meaning of the adverts.

3 We cannot vouch for the quality of goods and/or services advertised in this section. All ads are accepted in good faith.

4 We reserve the right to amend or even refuse ads at our discretion.

5 No pirated software may be sold through these columns. Any readers being offered non-originals should contact us.

6 We cannot guarantee that adverts will appear in a specific issue of *New Computer Express*.

7 The following declaration must be signed:

I have read and understood the terms for the inclusion of my ad.

Signed .....

● A short and sweet games section this week, as we devote a whole spread to previews elsewhere. Some tasty releases nonetheless, with *Grand Monster Slam* threatening to kick the Beloms out of everything else. *Jack Nicklaus Golf* scores a hole in one with reviewer John McCleary, and Raider lends new thrust to an old formula

JACK NICKLAUS GOLF

ACCOLADE

PC £24.95dk
Also in C64

• Teeing up for a drive down the fairway

Boasting precision in gameplay and the finest greens on God's Earth, Accolade has come up with what's being touted as the ultimate in golf simulation.

● GAMEPLAY

Nicklaus, the undisputed master of golf etc etc, plays a useful part offering tips and comments on different holes chosen from all the best courses. Many of these are recognisable to avid TV golf freaks but mere pipe dreams for regular club swingers. Nicklaus has chosen the best from some fine courses.

Distance control is impressively accurate – if there's no wind and you make a good shot it will land where you had intended. But you have to contend with frustrating holes and difficult winds at times.

The putting greens are a wonder. None are too easy and, like 'the real thing', all need practice and concentration. Striking a birdie is difficult; coming away with an eagle is cause for celebration.

Accolade hasn't fussed around with a tedious manual. The whole thing is simple to get to grips with. As well as Nicklaus's favourite holes there are a couple of complete courses for variety.

● GRAPHICS AND SOUND

PC owners know better than to expect good graphics, and this is no exception. However, the whole thing is passable and key areas such as bunkers, rivers and the pin are easily recognizable. Even the black and white version poses no problems. The only down side is the long time it takes for screen updates. Not surprisingly (and thankfully) there's no sound to speak of.

● OTHER VERSIONS

As well as being available on the C64, you can also get an extra course disk for the PC and C64, price £11.95 and £8.95 respectively.

● EXPRESS VERDICT

Brilliant. A delightful mish-mash of wonderful holes, teasing shots and computerised accuracy.

✪ ✪ ✪ ✪

John McCleary

GRAND MONSTER SLAM

GOLDEN GOBLINS/RAINBOW ARTS

Amiga £19.99dk
Out soon on C64, ST, PC

German software house Rainbow Arts is famous for its brilliant – but totally unoriginal – titles such as *Katakis/Denaris* (reminiscent of *R-Type*), *Garrison* (*Gauntlet*) and *Great Giana Sisters* (*Super Mario Bros*). So is *Grand Monster Slam* just a scam with glam?

● GAMEPLAY

As with most original games, *GMS'* gameplay is deceivingly simple, but totally addictive. A cross between football and crossfire, but unlike both!

The Grand-Slam-Tournament is an elimination contest, with you pitted against 7 other players (each one with their own strengths and weaknesses) – playing one at a time. The play area is a pitch, with your opponent at the top and you at the bottom. During play, you have to kick these furry fuzz-ball creatures (called Beloms) at your opponent – who tries to do the same back to you. If you get hit, you'll lose valuable kick-in time. Whoever manages to kick all the Beloms onto the opposing side, wins. Between each bout, there's one of two qualification rounds – then its back to the action.

INSTANT APPEAL

● GRAPHICS AND SOUND

As with most Rainbow Arts releases, audio-visuals are of a very high standard. The sprites are original, well animated and beautifully drawn, and are matched perfectly by the wonderful stadium backdrop, complete with its individually animated spectators.

The audio consists of a subtle little soundtrack on the title page and a satisfying selection of sampled sound spot-effects in-game.

● OTHER VERSIONS

Although we haven't seen the other versions yet, Rainbow Arts has told us the ST version is almost identical. We can't wait to get our hands on the other versions! Look out for an update shortly.

● EXPRESS VERDICT

GMS marks a terrific step forward for Rainbow Arts. It's got Arts' traditionally high standard of audio-visual excellence, only this time backed up by original, entertaining and plain old fun gameplay.

The only element that stopped us giving it five stars was the lack of a two-player option. Having said that, *GMS* provides instant appeal, a great deal of amusement, and is the sort of game you can go back to in a few months time and still enjoy playing. Don't miss this golden opportunity.

✪ ✪ ✪ ✪

Rik Haynes

• About to face a barrage of Beloms

• Your motley gang of opponents

RAIDER

IMPRESSIONS

Amiga £19.99dk
No other versions announced yet

With ST owners able to play the classic *Thrust* and well renowned *Oids*, Amiga owners now have the chance to sample the same type of game thanks to *Raider* by Impressions.

● GAMEPLAY

Using a user-definable selection of keys, you use *Asteroid*-type control methods to fly your spacecraft over eight planet surfaces taking out any emplacements while avoiding collision with either landscape or projectiles along the way.

● GRAPHICS AND SOUND

Of course, its the gameplay that counts in this game, but even so the backdrops aren't that bad, and the sampled sound spot FX do an OK job.

● OTHER VERSIONS

No details at present.

● EXPRESS VERDICT

Raider marks an admirable debut release for software company, Impressions. Sure, it's not state-of-the-art, but it is playable and great if you're an Amiga owner looking for some *Oids* type entertainment.

✪ ✪ ✪

Rik Haynes

• Thrust/Asteroids/Oids all over again, but nice scenery

LITTLE RED CORVETTE

Rik Haynes takes to the streets of San Francisco while listening to Prince on the in-car CD...

VETTE!

SPECTRUM HOLOBYTE/ MIRRORSOFT

After its award winning flight-sim *Falcon*, US software company Spectrum HoloByte is looking to repeat *Falcon*'s success with its new racing-sim *Vette!* You're in the hot-seat of a Corvette, racing classic European sports cars – C5s, Skodas and Reliant Robins excepted – through the hilly streets of San Francisco. Out in summer on PC and Mac, with ST and Amiga versions due in the winter.

THE LAST STUNTMAN

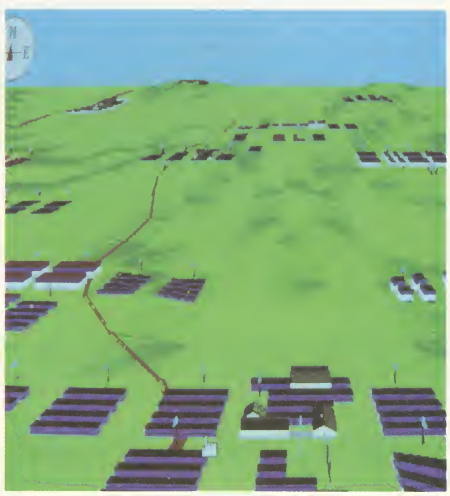
ACTUAL SCREENSHOTS/CRL

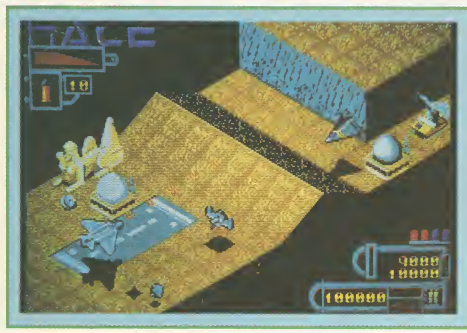
What with Rainbow Arts' *Dangerfreak* (previewed in *Express* 15) and Codemasters' *Super Stuntman Simulator* (previewed in *Express* 23), it looks as though stuntman computer games are all the rage. *The Last Stuntman* is the first Hypermedia title, which can supposedly be played as a game, watched like a film or listened to like an album. Available shortly on ST and Amiga.

WATERLOO

PSS/MIRRORSOFT

If Atari's *Borodino* was to your liking, then the follow-up, *Waterloo*, should sit comfortably on your software shelf, as it's more of the same. Playing either Napoleon or Wellington in this wargamming simulation of the epic 1815 battle, you'll have complete control of your forces, with all the action represented by 3D static screens. *Waterloo* will be available shortly on Amiga and PC.





HOSTILE ALL TERRAIN ENCOUNTER

GREMLIN

Looking something like the classic pseudo-3D sideways shoot-'em-up *Zaxxon*, *Hostile All Terrain Encounter* splits your control between a Star Fighter and a Ground Assault Vehicle, in a mission to annihilate anything that moves (or stays still). Out next month on Spectrum, C64, CPC, ST and Amiga – so will you *HATE* it?

CHUCK YEAGER'S AFT

ELECTRONIC ARTS

This popular flight sim is due out on the Spectrum any time now. With the choice of flying a Cessna, F-15, F-16, SR-71 or Spitfire, which plane would you choose? Well there's no need to make a hasty decision because *Chuck Yeager* lets you fly all these well-known aircraft – and more besides – as you experience each one's strengths and weaknesses at first hand.

STORMLORD HEWSON

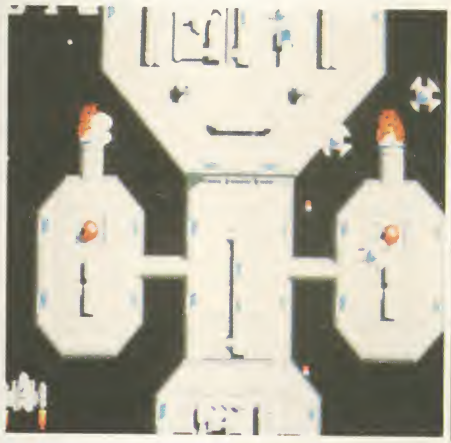
This arcade adventure places you in the role of Stormlord, protector of the innocent and upholder of justice, as you wander the lands of Euphoria in your quest to de-throne the evil Queen – thus saving the fairy folk from total annihilation. Originally by Raffaelle "*Cybernoid*" Cecco on the Spectrum, ST and Amiga versions of *Stormlord* should be hitting the streets shortly.

GOLD OF THE AMERICAS
STRATEGIC STUDIES GROUP/ELECTRONIC ARTS

Gold of the Americas is a one to four-player historic strategy game, seeing you involved in an expedition to conquer the New World of the Americas. Setting out from either England, France, Spain or Portugal, you'll have to master the seas, colonies and opposition if you wish to claim your right to rule. Due for release on the PC in early Summer.

ALPHA MAX ONE
WHITE PANTHER

Alpha Max One is the latest from unknown software company, White Panther, and is a scrolling shoot-'em-up based on some inane sci-fi story of the type you always find on the back of a game's packaging. As always, this screen shot is out of focus – how about getting a new camera guys? *Alpha Max One* is scheduled to be in the shops as you read this

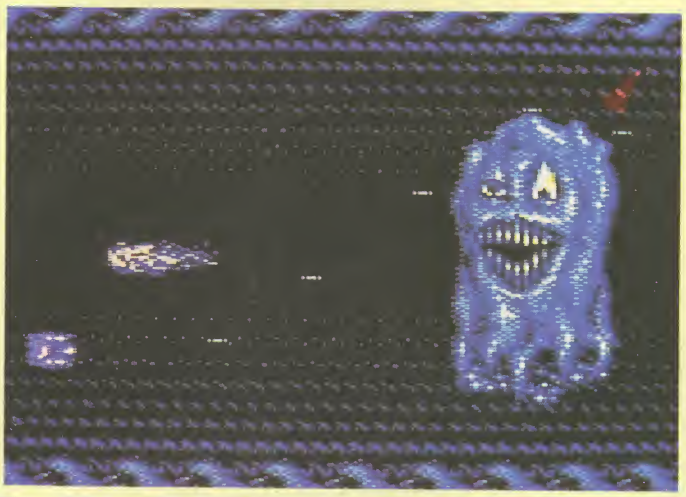


PANIC STATIONS
GREMLIN

Don't panic! Don't panic! 'Cause you need nerves of steel in *Panic Stations*, for you're a robot in a space station looking for various escapee robots that are running amok throughout the complex. You'll have to watch your energy and ammo levels though, or you could becomejust another pile of scrap metal. Out next month on Spectrum, C64, CPC, ST and Amiga.

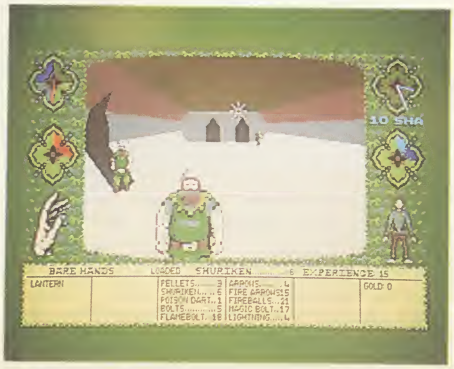
PHOBIA IMAGEWORKS/MIRRORSOFT

Designed and programmed by the infamous team of David Bishop and Tony Crowther, *Phobia* is a horizontally-scrolling shoot-'em-up featuring new techniques in scrolling programming, producing better colour scrolling on the C64 and 32-colour parallax scrolling on the ST and Amiga. *Phobia* will be coming to a C64, ST or Amiga screen shortly, but there's nothing to fear unless you greatly dislike it.



SLEEPING GODS LIE
EMPIRE

The first release on the new Empire label, *Sleeping Gods Lie* is a role-playing arcade adventure featuring 64 different landscapes including mountains, deserts and catacombs, all populated by monsters ranging from giant mice to icy snowmen. *Sleeping Gods Lie* is due out on ST and Amiga shortly, with a PC version following in Summer. 8-bit versions are currently under consideration.

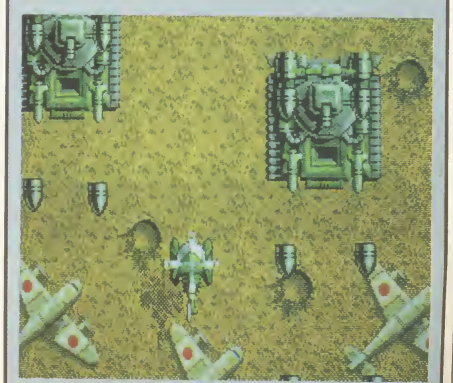


SUPER SCRAMBLE SIMULATOR
GREMLIN

Surprisingly not another Codemasters release, *Super Scramble Simulator* unsurprisingly simulates motorbike scrambling. Riding high and low on your cross country turbonutterscrambler, you'll encounter 1:2 gradient hills, rocks, logs, streams, and even the occasional spectator to mow down as you race to the finish line. *Super Scramble Simulator* is due for release next month on Spectrum, C64, CPC, ST and Amiga.

APACHE STRIKE EXOCET

Flying a helicopter in this scrolling shoot-'em-up, you'll encounter enemy ground-based gun emplacements, bombers, tanks, troop carriers and even other choppers as you wade through the opposition at full turbine speed. You'll also be able to pick up extra weaponry to help you in your frenzy of destruction. Out in July on ST and Amiga from the makers of *Foundations Waste* and *Hyperdome*.



MEDIA GOLD

We Accept EXPRESS VOUCHERS

Atari ST and CBM Amiga, Public Domain and Software Specialist

Guaranteed 72 hour turn around

On all Software available

We Accept EXPRESS VOUCHERS

For FREE membership to the GOLD CLUB simply purchase any of the titles listed below from us. Gold membership means you will get an extra discount from our listed prices (which are already good value), you will also receive our P.D. Catalogue for ST or Amiga

ATARI ST

Ballistix £15.00	Lombard Rally £18.50	Run the Gauntlet £15.00	Gunship £18.50
Barbarian II £15.00	Vindicator £15.00	Last Duel £11.50	Pac-Land £15.00
Custodian £15.00	Captain America £6.50	Road Blasters £15.00	Real Ghostbusters £15.00
F.O.F.T £23.00	The Deep £15.00	Leisure Suit Larry II £18.50	Police Quest II £18.50
Prison £15.00	Realm of the Trolls £15.00	Zak McKracken £18.50	Leisure Suit Larry I £15.00
Falcon £18.50	Steve Davis Snooker £15.00	War in Middle Earth £15.00	Chuckie Egg II £15.00
Baal £15.00	Blasteroids £15.00	F16 Combat Pilot £18.50	Borrodino £23.00

NOW IN STOCK POPULOUS £18.50

COMMODORE AMIGA

Super Hang On £18.50	Realm of the Trolls £18.50	Batman £18.50	Pac-Land £15.00
Denaris £15.00	Slipstream £15.00	Prison £15.00	Run the Gauntlet £18.50
Precious Metal £18.50	Baal £15.00	War in Middle Earth £15.00	Hybris £18.50
I.S.S. £18.50	Dragon's Lair £33.00	Fourth and Inches £15.00	R-Type £18.50
H.K.M. £11.50	Kennedy Approach £18.50	Steve Davis Snooker £15.00	Zak McKracken £18.50
Tiger Road £15.00	Operation Wolf £18.50	Balance of Power 1990 £18.50	
Road Blasters £15.00	Blasteroids £18.50	Knight Hawk £15.00	

NOW IN STOCK POPULOUS £18.50

SPECIAL OFFER

3" Disks in Stock — 10 DSDD 3" only £19.95 — All disks include a FREE Library Case

PUBLIC DOMAIN DISKS

Amiga Demo Pack 1...£9.95 — Amiga Demo Pack 2 ...£9.95 — ST Demo Pack 1... £9.95 — ST Demo Pack 2... £9.95

ALL OUR PD DISKS ARE £2.50 EACH

We also have a large P.D. Library for ST and Amiga, price at only £2.50 per disk.
All software is available at time of going to press, any title not yet released can be ordered. All our orders are despatched by first class post (UK P&P included), Overseas add £3.50. Goldclub membership is £3.00 without a purchase. Access orders taken and despatched within 24 hours.

Access

Media Gold Access Orderline 0532 304384
Dept. NCE, Marcon House, Wyther Lane, Kirkstall, Leeds, LS5 3BT.
Written any P.D.? Send it in to us.

Access

Scoops at Software Superstores

We Accept EXPRESS VOUCHERS

11 Market Square Arcade,HANLEY,Stoke-on-Trent, ST1 1PO. Tel/Fax: 0782 202269

Sensational Software at Silly Prices

Spectrum Only

Ace 2088	T	3.99
Time & Magik	T	3.99
Lord of the Rings	T	4.99
International Karate +	T	3.99
Guadalcanal	T	3.99
Living Daylights	T	2.99
Dark Sceptre	T	2.99
Fox Fights Back	T	3.99
Ace 2088	T	3.99
Maria Whitaker's Strip Poker	T	3.99
Dragon's Lair II (Singes Castle)	T	2.99
Fernandez Must Die	T	3.99
Now Games 5	T	3.99
Hellfire Attack	T	2.99
Scott Adams Adventure Scoops	T	2.99
Galactic Games	T	2.99
Mean Streak	T	2.99
Super Sprint	T	2.99
Pub Games	T	2.99
Hysteria	T	2.99
Black Magic	T	2.99
Computer Hits 10 Vol 5	T	2.99
Supreme Challenge	T	6.99
Micro Prolog (inc Book)	T	9.99
Scrabble	T	7.95
Countdown	T	2.99

Commodore 64 Only

Cluedo/Monopoly/Scrabble Compilation	T	9.99
Time & Magik	T	3.99
Lord of the Rings	T	3.99
Defender of the Crown	T	4.99
Bombuzal	T	4.99
Paperboy	Disk	4.99
Predator	Disk	4.99
Bangkok Knights	D 4.99 / T	3.99
Championship Sprint	T	2.99
Super Sunday	T	2.99
Slaine	T	2.99
Rampage	T	2.99
Ace 2088	T	3.99
Scott Adams Adventure Scoops	T	2.99
Guadalcanal	T	3.99
Hunters Moon	T	2.99
Fox Fights Back	T	3.99
Adrian Mole Secret Diary Kit	T	2.99
Supreme Challenge	T	6.99
Computer Hits 10 vol 5	T	6.99
Pitmans Typing	T	2.99
International Karate +	T	2.99
F-15 Strike Eagle	T	3.99
Galactic Games	T	2.99
Trivial Pursuit (Young Players)	T	7.99

Amstrad CPC Only

Fury	T	2.99
Vixen	T	2.99
Slaine	T	2.99
Pub Games	T	2.99
Blockbusters	T	3.99
Every Second Counts	T	3.99
Strip Poker II Plus	T	3.99
Guadalcanal	T	3.99
Supreme Challenge	T	6.99
Cluedo	T	7.99
Scrabble	cpc Disk	9.99
Monopoly	cpc Disk	9.99
Predator	cpc Disk	5.99
Fernandez Must Die	cpc Disk	5.99
Side Arms	cpc Disk	5.99
Computer Hits 10 Vol 5	T	6.99
Compendium of Games	T	3.99

Atari 8 Bit

Zaxxon	T	7.99
Whirlyinurd	T	2.99
Galactic Trader	T	2.99
Four Great Games	T	3.99

Minimum Order £10. *Add 50p per title for post & packing. Order by post or order by phone. Access & Visa orders welcome.*

CALLERS: See our main advert on page 18 for details of your nearest shop.

The incredible New Computer Express voucher scheme can save you over £10 when you buy from adverts in this magazine!

Full details on next page

£1 voucher. Valid for orders above £20

This voucher may be used as £1.00 part payment on any order totalling over £20 from a participating advertiser in *New Computer Express*. You simply fill in the details below and send it off with your order.

Your name _____

Address _____

_____

Telephone (if possible) _____

Item (s) purchased _____

Only one voucher per order is allowed. This voucher and its accompanying order must be received by the advertiser before 9am **May 7, 1989.**

£2 voucher. Valid for orders above £40

This voucher may be used as £2.00 part payment on any order totalling over £40 from a participating advertiser in *New Computer Express*. You simply fill in the details below and send it off with your order.

Your name _____

Address _____

_____

Telephone (if possible) _____

Item (s) purchased _____

Only one voucher per order is allowed. This voucher and its accompanying order must be received by the advertiser before 9am **May 7, 1989.**

£3 voucher. Valid for orders above £60

This voucher may be used as £3.00 part payment on any order totalling over £60 from a participating advertiser in *New Computer Express*. You simply fill in the details below and send it off with your order.

Your name _____

Address _____

_____

Telephone (if possible) _____

Item (s) purchased _____

Only one voucher per order is allowed. This voucher and its accompanying order must be received by the advertiser before 9am **May 7, 1989.**

£4 voucher. Valid for orders above £80

This voucher may be used as £4.00 part payment on any order totalling over £80 from a participating advertiser in *New Computer Express*. You simply fill in the details below and send it off with your order.

Your name _____

Address _____

_____

Telephone (if possible) _____

Item (s) purchased _____

Only one voucher per order is allowed. This voucher and its accompanying order must be received by the advertiser before 9am **May 7, 1989.**

EXPRESS VOUCHERS

How the scheme works

- **The Express voucher is a special scheme to encourage you to buy New Computer Express regularly.**
- **It offers you savings of up to £10 when you buy goods through the magazine.**
- **The vouchers are not limited to specific items – you can save on any purchase from one of the participating advertisers.**
- **Most mail order advertisers in this magazine are taking part in the scheme – just look for this sign. →**

- **Remember. The use of just one voucher could more than recoup the price of the magazine.**

THE FIVE SIMPLE RULES

1. Express vouchers can be used to obtain discounts on purchases of goods advertised in this issue of *New Computer Express*, **provided** that they are bought directly from an advertiser taking part in the scheme. The vouchers are valid **only** for those advertisements which say *"We Accept Express Vouchers"*.

2. Each voucher entitles you to a discount at the voucher's face value, **provided** that your overall order level is **higher** than the figure indicated on the back of the voucher.

3. To use a voucher, simply enclose it with your discounted payment when you order. You may use **only one** voucher in any one order.

4. The order including the voucher must be received by the advertiser before the closing date printed on the voucher.

5. **You must** fill in the details requested on the voucher.

ATARI ST and AMIGA

Sixteen Bit Superdeals from the Sixteen Bit Specialists !

CUSTOMERS PLEASE NOTE! When comparing prices remember ours include fast delivery by courier.

520 STFM Super Pack
£349.00

Inc. VAT and Next Day Delivery

Super Pack includes:
- ★ 520 STFM 512K Keyboard with Built-in 1 Megabyte disk drive and TV Modulator
- ★ £450 of games software including BUGGY BOY, TEST DRIVE, MARBLE MADNESS, WIZBALL and 17 more.
- ★ Organiser Business Software including WORDPROCESSOR, SPREADSHEET and DATABASE.
- ★ FREE JOYSTICK
- ★ All leads, manuals PLUS MOUSE and free mains plug!

REMEMBER! Many ST's do not come with BASIC - ours come with ST BASIC REV D by Metacomco.

Also available with only one free game and no joystick or Organiser

£269.00 inc.

1040STFM Super Pack
£439.00

Includes everything in the Atari 520 STFM Super Pack but with the 1 megabyte memory 1040 STFM Keyboard

1040STFM Business Pack
£439.00

Business Pack includes:
- ★ Atari 1040STFM Keyboard with 1 meg memory and 1 meg built-in disk drive plus TV modulator.
- ★ £385 worth of Business Software including MICROSOFT WRITE word processor (£150), SUPERBASE PERSONAL Database (£60) and VIP PROFESSIONAL Lotus 123 Spreadsheet clone (£150).
- ★ All leads, manuals and mouse.

MEGA 1 BUSINESS PACK
£529.00

Features:
- ★ Separate Keyboard and System Unit
- ★ All the Software included with 1040 STFM Business Pack.
- ★ Blitter chip installed for faster graphics

Inc SM124 Mono Monitor..... £628.00

ACCESSORIES

Quickshot II Turbo Joystick.....£9.95	Branded Memorex 3.5" DS DD Disks
Competition Pro 5000 Joystick....£13.95	Box of 10.....£13.95
Competition Pro with Autofire.....£14.95	40 Memorex Disk Box
Konix Speedking Joystick.....£11.95	For 40 3.5" Disks.....£8.95
Red Mouse Mat with Amiga logo...£6.95	Amiga A501 1 Meg Expansion..£139.99
Plain blue Mouse Mat.....£5.45	Amiga A501 + Dragon's Lair.....£169.99

PRINTERS

Star LC10 including interface lead for ST/Amiga.....£229.00
Star LC10 colour including interface lead for ST/Amiga.....£259.00
Citizen 120D including interface lead for ST/Amiga.....£159.00

SEIKOSHA 80 COLUMN PRINTERS - AMAZING PRICES

Seikosha 9 pin NLQ including interface lead for ST/Amiga.....£139.00
Seikosha 24 pin LQ including interface lead for ST/Amiga.....£279.00

Amiga A500 System 1
£365.00

Workbench 1.3 £9.95

Inc VAT and Next Day Delivery

System 1 includes:
- ★ Amiga A500 512K Keyboard with Built-in 1 Megabyte disk drive.
- ★ Free TV modulator worth £24.99 allowing you to use the Amiga with a normal TV.
- ★ Amiga BASIC, Amiga EXTRAS, Workbench PLUS the Amiga Step by Step Tutorial.
- ★ All leads, manuals PLUS MOUSE and mains plug!

Amiga A500 System 2
£385.00

- ★ Amiga A500 System 1 PLUS over £280.00 worth of software comprising 10 games, PLUS either SPRITZ or PHOTON PAINT GRAPHICS PACKAGE.

Amiga A500 System 4
WITH 500 FREE AIR MILES!
£449.00

NEW !

includes everything in our Amiga System 1 package PLUS SPRITZ Graphics Package, disk storage wallet for 25 disks, Who Framed Roger Rabbit, Nebulus, Starray PLUS 500 FREE AIR MILES, enough for a return trip to PARIS, AMSTERDAM OR BRUSSELS!

AMIGA 1 MEG!
£499.00

Announcing the new Amiga 1 meg-an A500 system 1 with fitted 1 megabyte memory expansion and clock card PLUS TV Modulator AND DRAGON'S LAIR a six disk 1 meg megagame!

AMIGA 1 MEG +
£519.00

Our Amiga 1 meg + also includes the £230 worth of games software normally given with our A500 System 2 Games Pack.

EXTERNAL DISK DRIVES

Atari SF314 1 Megabyte.....£139.00
Amiga A1010 1 Megabyte.....£139.00
Cumana 1 Megabyte Atari or Amiga.....£99.95

MONITORS

Commodore Amiga A1084 Stereo colour Monitor inc lead.....£269.00
Atari SC1224 Colour Monitor inc lead.....£259.00
Atari SM124 Mono Monitor including lead.....£104.00
Philips CM8833 stereo colour monitor inc. lead for ST or Amiga.....£249.00

CREDIT CARD ORDERLINE ☎ 0908 78008 (Mon - Sat 9am - 6pm)

To order either call the orderline above with your Credit Card details OR make a cheque or P.O. payable to Digicom Computer Services and send it with your order to the address below. Callers are also most welcome at the address below

We Accept EXPRESS VOUCHERS

DIGICOM

Unit 36, Wharfside, Fenny Stratford, MILTON KEYNES MK2 2AZ

All prices include VAT and delivery by courier

Access VISA

Computer chaos

Exerpts from Mel Croucher's encyclopaedia of electronic errors

Kingston upon Thames

The local library is rightly proud of its computerised bar code system, and believes that the cost of over £10,000 is fully justified. Mr Peter Dalton, head of Beverley School Sixth Form examines the system, duplicates it and makes a few improvements for his own use, including a real-time clock, a computer-generated bar-code writer and assorted friendly on-screen greetings. The cost of the complete improved system? Fifty-five quid.
Times Education Supplement

Dearborn, Michigan

Fourteen thousand new Lincoln Continental Mark VII limos are quietly recalled to the Ford motor plant because of a lethal fault. The car's computerised air suspension system should switch itself off once the vehicle has been parked in its garage, but instead it sends out an electronic pulse. This causes relays to stick open, and overheats a main electrical wiring loom. The result? The cars set themselves on fire and explode. Among the first victims of garages reduced to ashes are two executives of the Ford Corporation
Newhouse News Service

Etampes, France

November 1979. Three men in jeans and leather jackets driving a Peugeot on Route-20 at 10pm. They stop for petrol. The garage attendant is suspicious of the home-made number plate 3383FM13, and phones the cops to report a 'suspicious car'. The Etampes police computer confirms that 3383FM13 is a stolen vehicle, and the goon squad sets off in pursuit. They intercept the men and manage to shoot Monsieur Claude Francois directly between the eyes with a .357 Magnum. The cop is not arrested, because the police computer told him that Francois was a criminal. Unfortunately, 3383FM13 was stolen in 1976, and Francois bought it legally ten days before he was shot.
Graham Allen Research

Paramus, New Jersey

A Superior Court judge rules that computers are unnecessary. Under a 1957 Sunday Trading embargo, 'worldly employment or business, except works of necessity or charity' are banned on the sabbath. Local businesses plead that they need to keep their machines running seven days a week, but the judge declares that God doesn't agree with computers.
San Francisco Chronicle

Newsweek Magazine

Richard Sandza is an American journalist. On November 12th 1984 he writes a scathing article on hackers. In retribution, the TRW credit information service is hacked and Sandza's credit card numbers are extracted and posted all over national bulletin boards. He is relieved that he discovers the break-in after only $1100 gets clocked up in unauthorised charges, until he discovers that his home computer is now under the control of a network of external dial-ups.
Richard Sandza

PACE (The Journal of Heart Pacemaker Patients)

In the United States, the new generation of pacemakers can be monitored by patients dialling up a diagnostic service once a month, and transmitting a digital sequence. The manufacturers declare that there is no possible electronic communication that can interfere with this process. They have obviously forgotten what happened when the original Sputnik orbited the Earth opening and closing garage doors with its transmissions. The first victim is a gentleman undergoing microwave arthritis therapy which reprograms his heart and kills him. The latest concerns an ongoing litigation after a shopper is murdered by an in-store anti theft device.
Nancy Leveson, Software Engineering Notes

Chicago, Illinois

Joe Pistritto's cement factory commissions a distribution control system based on antique 8080 processors and defective MOSTEK RAM chips. When the conveyors inevitably foul up, large boulders build themselves into an eighty foot mountain. After half an hour or so, the operations controller gets fed up with the dull thuds coming from the street, and looks out of the window. The system seems to feel somewhat guilty, and having written off eleven cars and one building, it promptly commits suicide by starting up the conveyor belt and crushing itself to death.
Joe Pistritto

Ministry of Defence

'Reliable Sources' within the MoD report that their Apple Macs have been infected with a right-wing virus. The Ministry uses the Macs for graphics, but a few of them are also employed for word processing, and whenever the words 'Prime Minister' or 'Margaret Thatcher' are input, the document vanishes and a picture of Maggie fronting the Union Jack appears. The MoD has not yet found a cure. Neither has the British voter.
Will Martin, Software Engineering Notes

NEXT WEEK

The Future

What will computing be like in 1999? Find out the future now with Express's look inot the future

PC2286 reviewed

How does Amstrad's up market machine perform?

A-Z Part 3

Commodore, CP/M, Codemasters, Comms, C, Copy protection...

STOS

New add-ons to let you write your own games

PLUS

Another sundae of letters, tips, reviews, features, games, classified bargains... and the very latest in news and comment on the computer scene

On sale Thursday May 11th

ORDER YOURS NOW!

Only 48p!

We Accept EXPRESS VOUCHERS

TREBLE H COMPUTING

We Accept EXPRESS VOUCHERS

ATARI GIFT PACK

ATARI 520 STFM 1 MEG DRIVE
MOUSE, LEADS + MANUAL
FREE JOYSTICK
FREE 80 CAP. DISK BOX
FREE 10 x 3 1/2" DS/DD DISKS
FREE MOUSE MAT
SOURCE BOOK + TUTORIAL

ALL FOR ONLY £384.99

ATARI 520 STFM 1 Meg Drive £275.99
ATARI 520 STFM 1 Meg Drive + Super Pack £369.99
ATARI 1040 STFM + Professional Pack or Super Pack £449.99
ATARI 1040 STFM Steinberg Pro-12 ..... £449.99
**** NEW ** MEGA ST 1 NOW AVAILABLE inc. PROFESSIONAL PACK.. £549.99**

ADD £99.99 TO INCLUDE SM124 MONO MONITOR WITH ANY OF ABOVE

AMIGA 500 ..... £379.99
AMIGA 500 inc. 1/2 Meg RAM Expansion + Dragon's Lair £499.99
AMIGA 500 + 1084S Med Res Colour Monitor £599.99
AMIGA AIR MILES PACK, Includes Spritz Paint, Disk Wallet, Roger Rabbit, Star Way, Nebulus, 500 Miles Air Travel Voucher £449.99

AMIGA GIFT PACK

AMIGA 500
MOUSE, LEADS + MANUALS
FREE MODULATOR
FREE JOYSTICK
FREE 80 CAP. DISK BOX
FREE 10 x 3 1/2" DS/DD DISKS
FREE MOUSE MAT
WORKBENCH + MANUAL

ALL FOR ONLY £399.99

ACCESSORIES

Amiga A501 RAM Upgrade	£129.99
ST Multiface	£49.95
Disk Organiser for Above	£10.00
Workbench 1.3	£13.50
Joystick/Mouse Extension	£5.50
Disk Drive Cleaner (3.5 or 5.25)	£4.95
Mouse Mat (Soft)	£4.50
ST or Amiga Dust Cover	£6.50
Amiga to Scart Lead	£9.95
ST to Scart Lead	£9.95
Quickshot II Joystick	£8.50
Cheetah 125+ Joystick	£6.95
DCOMJoystick (Fully Microswitched)	£9.95
Competition Pro 5000 (Black)	£11.50
Competition Pro 5000 (Clear)	£12.50
50 x 3.5" Disk Labels	£1.20
80 Capacity 3.5" Disk Box	£8.95
Monitor Covers From	£6.95
Konix Speedking	£10.50
Konix Navigator	£12.25

GAMES SOFTWARE

	ST	AMIGA
Airball	£13.50	£13.50
Archipelagos	£16.50	--.--
Balance of Power 1990	£16.50	£16.50
Ballistix	£13.50	£13.50
Barbarian II	£13.50	--.--
Battlehawks 1942	£16.50	£16.50
Blasteroids	£16.50	£16.50
Butcher Hill	£13.99	£13.99
Chuckie Egg II	£13.50	£13.50
Cosmic Pirates	£13.99	£13.99
Dragonscape	£13.50	£13.50
Dragon's Lair (1 Meg)	--.--	£29.99
Dungeon Master	£16.50	£16.50
Elite	£16.50	£16.50
Falcon	£16.50	£19.50
Fed. of Free Traders	£20.99	--.--
F-16 Combat Pilot	£16.50	--.--
Fright Night	£13.50	£13.50
Galdregon's Domain	£13.50	£13.50
Gold Rush	£17.50	--.--
Human Killing Machine	£10.99	£10.99
Hybris	--.--	£16.50
Inc. Shrinking Sphere	£13.99	£17.50
International Karate +	£16.50	£16.50
Kick Off	£13.50	£13.50
Kings Quest IV	£20.99	--.--
K. Dalglish's Soccer Mgr	£13.50	£13.50
Leaderboard Birdie	£17.50	£17.50
Leisuresuit Larry II	£17.50	--.--
Lords of the Rising Sun	--.--	£19.50

	ST	AMIGA
May Day Squad	£13.50	£13.50
Microprose Soccer	£16.50	£16.50
Operation Neptune	£16.50	£16.50
Operation Wolf	£13.99	£13.99
Pac-Land	£13.50	£16.50
Police Quest II	£17.50	--.--
Prison	£13.50	£13.50
R-Type	£13.99	£17.50
Rambo III	£13.99	--.--
Realm of the Trolls	£13.99	£13.99
Ringside	--.--	£16.50
Road Blasters	£13.99	£13.99
Robocop	£13.99	£17.50
Rocket Ranger	--.--	£19.50
Roger Rabbit	--.--	£17.50
Roy of the Rovers	£13.99	£13.99
Run the Gauntlet	£13.50	£16.50
Speedball	£16.50	£16.50
Super Hang-On	£17.50	£17.50
Sword of Sodan	--.--	£16.50
Steve Davis Snooker	£14.99	£14.99
The Kristal	--.--	£20.99
The Real Ghostbusters	£13.99	£13.99
T.V. Sports Football	--.--	£19.50
Vindicators	£13.50	--.--
War in Middle Earth	£16.50	£16.50
Zak McKraken	£17.50	£17.50
Zombi	£16.50	£16.50
3D Pool	£16.50	£16.50

MONITORS

ATARI SM 124	£109.99
ATARI SC 1224	£289.99
COMMODORE 1084S	£259.99
PHILIPS 8833	£249.99

DRIVES

CUMANA 1 MEG 3.5" for ST	£99.99
CUMANA 1 MEG 3.5" for Amiga	£94.99
TRIANGLE 1 MEG 3.5" for ST	£94.99
TRIANGLE 1 MEG 3.5" for Amiga	£84.99
TRIANGLE 5.25" for ST or Amiga	£114.99
TRIANGLE 3.5" + 5.25" Multidrive	£194.99

PRINTERS

STAR LC10 mono inc Cable	£214.99
STAR LC10 colour inc Cable	£249.99
CITIZEN 120/D inc Cable	£139.99
EPSON LX800	£244.99
STAR LC 24/10 inc Cable	£324.99

HARD DRIVES

ATARI, SUPRA AND TRIANGLE AVAILABLE. PLEASE CALL FOR
*** BEST PRICES ***

MUSIC AND SOUND

ST

Steinberg Pro-24	£259.99
C-Lab Creator	£249.99
C-Lab Notator	£384.99
EZ Track Plus	£49.95
Super Conductor	£39.99
Pro Sound Designer	£49.99
ST Replay 4	£69.99

AMIGA

Aegis Sonix V.2	£44.95
Aegis AudioMaster II	£59.95
Amas	£84.95
Future Sound	£79.95
Perfect Sound	£79.95
Pro Sound Designer Gold	£79.95
Midi Interface	£24.95
Music X	Phone

DISKS

TOP QUALITY 31/2" DS/DD GUARANTEED BULK DISKS

10.....£8.90

25.....£21.00

50.....£37.50

100.....£73.00

INCLUDING LABELS

BRANDED 3 1/2" DS/DD 135TPI DISKS

PRICE PER BOX PLUS VAT

	1 Box	10 Box	25 Box
Verbatim	£12.70	£12.45	£12.20
3M	£14.30	£14.05	£13.80
Sony	£14.40	£14.15	£13.90
Dysan	£12.70	£12.45	£12.20
Maxell	£14.60	£14.35	£14.10
Kodak	£12.70	£12.45	£12.20

BRANDED 5 1/4" DS/DD 48TPI

Maxell	£8.70	£8.45	£8.20
3M	£8.95	£8.50	£8.45
Verbatim	£8.50	£8.25	£8.00
Kodak	£8.50	£8.25	£8.00
Dysan	£8.50	£8.25	£8.00
Sony	£9.25	£9.00	£8.75

ART & ANIMATION

ST

Degas Elite	£19.95
Cyber Paint 2	£59.95
Cyber Studio CAD 3D	£69.95
Spectrum 512	£44.95
Quantum Paint Pro	£32.95

AMIGA

Lights, Camera, Action	£49.99
Zoetrope	£84.95
Aegis Videoscape 3D	£109.99
Deluxe Paint II	£47.99
Comic Setter	£44.99
Mini-Gen (Genlock)	£104.99
Moviesetter	£59.95

IF YOU CAN NOT SEE WHAT YOU WANT, PLEASE CALL AS WE CAN NOT LIST EVERYTHING AVAILABLE

ATARI PC's from £599, Commodore PC's from £345

A2000's • Laser Printers • Monitor Stands • Business Software • Educational Software • Printer Ribbons • Printer Leads • Printer Stands • ST Clocks • Languages • Replacement Mouse •

★ **CALL FOR BEST PRICES** ★

TREBLE H COMPUTING
DEPT NCE
CROMER HOUSE
CAXTON WAY
STEVENAGE
HERTS
SG1 2DF

TEL: 0438 361738
FAX: 0438 740794

All prices include VAT
Please send Cheques/PO made payable to:-
TREBLE H COMPUTING
add £2.00 for Europe & £3.00 for overseas.
£6.00 for Courier Next Day Delivery

PERSONAL CALLERS WELCOME
OPEN 9-6 Mon -Sat

Shop prices may differ on certain items

All prices are correct at time of going to press and are subject to change without prior notice

Pick up an Atari 520STFM Super Pack for £279*

We Accept Express Vouchers

COMPUTER EXPRESS

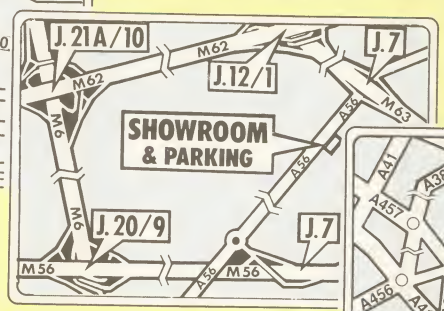
NORTH LONDON

99 Park Street Lane,
BRICKET WOOD,
St Albans, Herts AL2 2JA.
(0727) 72790

WEST LONDON

304 Kingshill Ave,
(off Uxbridge Road)
HAYES, Middlesex.
01–841 8744

MANCHESTER



85 Washway Road (A56),
(opposite IBM)
SALE, MANCHESTER M33 1TQ.
061–962 0780

SHOWROOM OPENING HOURS:
Monday–Friday 9am–6pm
Saturday 10am–5pm

BIRMINGHAM

1046 Coventry Road (A45),
HAYMILLS, BIRMINGHAM B25 8DP
021–772 5212

ATARI 520STFM

with 1 Megabyte Drive and SUPER PACK of software.

worth over £450 worth at normal retail price.

including Organiser Business Software, Chopper X, Ranarama, Starquake, Genisis, Black Lamp, Thrust, Test Drive, Buggy Boy, Quadralien, Xenon, Wizball, Seconds Out, Zynaps, Marble Madness, Beyonds Ice Place, Thundercats, Summer Olympiad, Arkanoids II, Eddie Edwards, Ikari Warriors.

Spring Special Price ... **£279.00**

(£328.25 including VAT and next day delivery.)

(Offer only available to first 100 callers. This special offer is not available in conjuction with any other offer or vouchers.)

Plus many more bargains....

ATARI HARDWARE

Atari 520STFM Explorer Pack with 512K RAM, 1Mb Disk Drive, Mouse	£235.00
Atari 1040STFM 1Mb RAM, Disk Drive, Mouse	£399.00
Atari 1040STFM with SM124 Mono Monitor	£499.00
Atari 1040STFM with Philips 8833 Colour Monitor	£599.00
Atari Mega ST2 2Mb RAM, Mouse, Mono Monitor	£799.00
Atari SM124 12" High Res Mono Monitor	£119.00
Atari SC1224 12" Med Res Colour Monitor	£339.00
Cumana 1Mb Double sided 3.5" Disk Drive	£90.00
Philips 8833 Med Res Colour Monitor – Excellent Buy	£249.00
Supra Drive 30Mb External Hard Disk – Auto Boot!	£478.00
Atari SH205 20Mb External Hard Disk	£399.99
Atari SLM804 Laser Printer 8 pages/min 300dpi	£1045.00
Supra 2400 Modem V21/V22/V22bis	£159.00
Pace Linnet Modem V21/V23 with cables	£99.00

ATARI STARTER KIT

Exclusive to Computer Express. Contains ST OWNER'S SECOND MANUAL, 5 DISKS OF PUBLIC DOMAIN SOFTWARE and DELUXE MOUSE MAT £10.00

STAR LC–10

For the money no other printer offers so much. 80 column multifont printer with 8 resident fonts and paper parking. 144cps draft and 36cps in NLQ quality £175.00
Colour version printing 7 colours £219.00

EPSON LX800

This latest offering from Epson zips along at 150cps in draft and 25cps in NLQ. Comes complete with Parallel Esc–P or IBM Parallel interface as standard, plus top mounted tractor feed. 80 column wide and good clear typeface £159.00

PANASONIC 1180

The NEW low cost successor to the popular Panasonic 1081. More features, more speed, more for your money £159.99

TIMEWORKS

The latest in low-cost DTP. An excellent package for anyone wanting to make a start in DTP for a very modest sum. Timeworks is very popular, and has good telephone support from the manufacturer.
Atari version £89.54

COMMODORE AMIGA 500

with free Modulator £319.00

AMIGA HARDWARE

Amiga 500 with modulator and 10 Games	£355
Amiga Colour Monitor	£249
Amiga Mini Genlock	£99
Amiga 500 External Drive 3.5"	£90
Amiga 500 External 20Mb Hard Disk with SCSI	£499

NEC P2200

At last a 24 pin printer you can afford, and with NEC's renowned reliability. This little baby cruises along at 168cps in high speed, 140cps in standard and a really nippy 56cps in Letter Quality mode.
This printer should be on every discerning buyers list ..£289.00
Cut Sheet Feed for P2200 ..... £65.00

Large Range of Popular Atari and Amiga Software Available.

*All prices exclude VAT and delivery.

All prices/specs subject to change

We're there because you're there.

CALL FOR FULL PRICE LIST
EXPORT & TRADE ENQUIRIES WELCOME
TELEPHONE & MAIL ORDERS WELCOME

Access

CALL **0727 37451**

VISA

OVER 2,800 ITEMS AVAILABLE
ON-SITE MAINTENANCE CONTRACTS
CREDIT CARDS NOT DEBITED UNTIL DESPATCH

Computer Express Ltd., Caxton Centre, Porters Wood, St Albans, Herts AL3 6XT